

=> fil wpix  
FILE 'WPIX' ENTERED AT 15:15:46 ON 10 JAN 2008  
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MOST RECENT THOMSON SCIENTIFIC UPDATE: 200802 <200802/DW>  
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20061231/UPIC, 20070601/UPIC and 20071001/UPIC. <<<

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(FILE 'HOME' ENTERED AT 14:40:29 ON 10 JAN 2008)

L1 FILE 'HCAPLUS' ENTERED AT 14:40:39 ON 10 JAN 2008  
1 SEA ABB=ON PLU=ON US2007077460/PN  
SEL RN

L2 FILE 'REGISTRY' ENTERED AT 14:41:11 ON 10 JAN 2008  
7 SEA ABB=ON PLU=ON (7440-05-3/B1 OR 7440-06-4/B1 OR  
7440-44-0/B1 OR 7782-42-5/B1 OR 785785-69-5/B1 OR  
785785-70-8/B1 OR 785808-93-7/B1)  
D SCA

L3 FILE 'WPIX' ENTERED AT 14:43:11 ON 10 JAN 2008  
1 SEA ABB=ON PLU=ON US20070077460/PN  
D IFULL

L4 FILE 'HCAPLUS' ENTERED AT 14:48:29 ON 10 JAN 2008  
49195 SEA ABB=ON PLU=ON (C OR CARBON) (3A) (FILM? OR THINFILM?)

L5 QUE ABB=ON PLU=ON PORE? OR PORE OR VOID# OR HOLE# OR  
PERVERIOUS

L6 600 SEA ABB=ON PLU=ON L4 (3A)L5

L7 QUE ABB=ON PLU=ON PARTICLE? OR MICROPARTICL? OR  
PARTICULAT?

Formatted: French (France)

L8 61 SEA ABB=ON PLU=ON L6 AND L7

L9 QUE ABB=ON PLU=ON DISPERS?

L10 QUE ABB=ON PLU=ON DISTRIBUT? OR INTERSPERS? OR  
SCATTER? OR SPREAD?

L11 21 SEA ABB=ON PLU=ON L8 AND (L9 OR L10)

L12 12 SEA ABB=ON PLU=ON L11 AND L9

Formatted: French (France)

L13 212447 SEA ABB=ON PLU=ON (L9 OR L10) (S)L7  
 L14 16 SEA ABB=ON PLU=ON L11 AND L13  
 L15 14 SEA ABB=ON PLU=ON L14 AND (PY<=2004 OR PRY<=2004 OR  
 AY<=2004)

FILE 'WPIX' ENTERED AT 15:05:15 ON 10 JAN 2008  
 L16 59 SEA ABB=ON PLU=ON L6 AND L7  
 L17 13 SEA ABB=ON PLU=ON L16 AND L13  
 L18 OUE ABB=ON PLU=ON PT OR PLATINUM  
 L19 2 SEA ABB=ON PLU=ON L17 AND L18  
 L20 11 SEA ABB=ON PLU=ON (L17 OR L19) AND (PY<=2004 OR  
 PRY<=2004 OR AY<=2004)

FILE 'HCAPLUS' ENTERED AT 15:08:43 ON 10 JAN 2008  
 L21 5 SEA ABB=ON PLU=ON L15 AND L18  
 L22 14 SEA ABB=ON PLU=ON L15 OR L21

FILE 'COMPENDEX' ENTERED AT 15:09:27 ON 10 JAN 2008  
 L23 18 SEA ABB=ON PLU=ON L6 AND L7  
 L24 7 SEA ABB=ON PLU=ON L23 AND L13  
 L25 2 SEA ABB=ON PLU=ON L24 AND L18  
 L26 6 SEA ABB=ON PLU=ON (L24 OR L25) AND PY<=2004

FILE 'JAPIO' ENTERED AT 15:12:30 ON 10 JAN 2008  
 L27 12 SEA ABB=ON PLU=ON L6 AND L7  
 L28 5 SEA ABB=ON PLU=ON L27 AND L13  
 L29 1 SEA ABB=ON PLU=ON L28 AND L18  
 L30 3 SEA ABB=ON PLU=ON (L28 OR L29) AND PY<=2004

FILE 'INSPEC' ENTERED AT 15:13:27 ON 10 JAN 2008  
 L31 25 SEA ABB=ON PLU=ON L6 AND L7  
 L32 3 SEA ABB=ON PLU=ON L31 AND L13  
 L33 0 SEA ABB=ON PLU=ON L32 AND L18

FILE 'WPIX' ENTERED AT 15:14:09 ON 10 JAN 2008  
 SEL L20 PN,AP

FILE 'HCAPLUS' ENTERED AT 15:14:28 ON 10 JAN 2008  
 L34 15 SEA ABB=ON PLU=ON (EP1995-114048/AP OR WO1991-JP882/AP)

L35 12 SEA ABB=ON PLU=ON L22 NOT L34

FILE 'HCAPLUS, COMPENDEX, JAPIO, INSPEC' ENTERED AT 15:15:03 ON 10  
 JAN 2008

L36 20 DUP REM L35 L26 L30 L32 (4 DUPLICATES REMOVED)

=> d 120 ifull 1-11

L20 ANSWER 1 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 2006-129293 [14] WPIX  
 DOC. NO. CPI: C2006-045046 [14]  
 TITLE: Composition for forming porous  
 carbon film, contains polyimide  
 obtained by dehydration ring closure of polyamic  
 acid obtained by reacting diamine and  
 tetracarboxylic acid anhydride, organic  
 particles and solvent medium  
 DERWENT CLASS: A14; A26; A32; E13; E36  
 INVENTOR: KAWAGUCHI K; MATSUKI Y

PATENT ASSIGNEE: (JAPS-C) JSR CORP  
 COUNTRY COUNT: 1

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
JP 2006028317	A	20060202	(200614)*	JA	10[0]	

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2006028317 A		JP 2004-208052	
			20040715

PRIORITY APPLN. INFO: JP 2004-208052 20040715

INT. PATENT CLASSIF.:

IPC ORIGINAL: C01B0031-00 [I,C]; C01B0031-02 [I,A]; C08K0005-00 [I,C]; C08K0005-151 [I,A]; C08K0005-3415 [I,A]; C08L0027-00 [I,C]; C08L0027-12 [I,A]; C08L0079-00 [I,C]; C08L0079-08 [I,A]

## BASIC ABSTRACT:

JP 2006028317 A UPAB: 20060227

NOVELTY - A composition contains a polymer (A) chosen from polyimide and polyamic acid, fluorine atom-containing organic particles (B) and a medium (C) chosen from N-alkyl-2-pyrrolidone, lactone and dialkyl imidazolidinone. The polyimide is obtained by dehydration ring closure of polyamic acid obtained by reacting a diamine compound and tetracarboxylic acid anhydride.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for formation of porous carbon film which involves forming a coating film of above composition on a substrate or into a container, heating the coating film in oxidation atmosphere, peeling the film from the substrate or the container, and again heating the coating film under inert atmosphere or in vacuum.

USE - For formation of porous carbon film (claimed).

ADVANTAGE - The composition enables formation of porous carbon film having uniform pore size.

## EXTENSION ABSTRACT:

EXAMPLE - (In g) Pyromellitic dianhydride (50) and 4,4'-diamino diphenyl ether (46) were dissolved in N-methyl-2-pyrrolidone (240), and reacted at room temperature for 6 hours. A polyamic acid solution (336) having intrinsic viscosity of 1.21 dl/g and polyamic acid content of 27 mass% was obtained. A dispersion liquid (72) containing 40 mass% of polytetrafluoroethylene particles having diameter of 0.3 microns dispersed in N-methyl-2-pyrrolidone, was added to the polyamic acid solution. The mixture was stirred at room temperature for 3 hours to form film-forming composition. - The composition was applied on Teflon and heated to 150degreesC for 15 hours under atmospheric pressure. The obtained film was further heated to 800degreesC for 10 hours in nitrogen atmosphere to form a porous carbon film having thickness of 500 microns. Elemental analysis of the porous film showed presence of 95.5% carbon, 0.5% hydrogen, 0.3% oxygen and 3% nitrogen. The porous film was found to have uniform pore size and bending strength of 100 MPa according to JIS K6911.

FILE SEGMENT: CPI

MANUAL CODE: CPI: A04-E10; A05-J01A; A10-E05B; A11-A02A;  
 A11-B04; E07-A02C; E07-A02G; E07-A03C; E07-D03;  
 E07-D09D; E31-N03D

ACCESSION NUMBER: 2005-494981 [50] WPIX  
 DOC. NO. CPI: C2005-150559 [50]  
 DOC. NO. NON-CPI: N2005-403535 [50]  
 TITLE: Infrared-ray absorption film for infrared-ray sensor used in detecting infrared-rays, uses porous material, preferably carbon or meso-porous material  
 DERWENT CLASS: L03; S03; T04; U14  
 INVENTOR: ITOH T; ITO T  
 PATENT ASSIGNEE: (ITOH-I) ITOH T; (NPDE-C) NIPPONDENSO CO LTD;  
 (NPDE-C) DENSO CORP  
 COUNTRY COUNT: 2

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 20050133722	A1	20050623	(200550)*	EN	4 [2]	
JP 2005175069	A	20050630	(200550)	JA	6	
US 7183551	B2	20070227	(200718)	EN		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 20050133722	A1	US 2004-8804	20041209
JP 2005175069	A	JP 2003-410372	20031209

PRIORITY APPLN. INFO: JP 2003-410372 20031209

## INT. PATENT CLASSIF.:

IPC ORIGINAL: G01J0005-00 [I,A]; G01J0005-00 [I,C]  
 IPC RECLASSIF.: G01J0001-02 [I,A]; G01J0001-02 [I,C]; H01L0027-14 [I,A]; H01L0027-14 [I,C]; H01L0037-00 [I,A]; H01L0037-00 [I,C]

## BASIC ABSTRACT:

US 20050133722 A1 UPAB: 20051223

NOVELTY - An infrared-ray absorption film uses porous material, preferably carbon or meso-porous material.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for producing infrared-ray absorption film comprising applying a porous material precursor solution onto substrate; and conducting sintering.

USE - Used for infrared-ray sensor (claimed) used in detecting infrared-rays.

ADVANTAGE - Acquired through an economical process, e.g. ink jet printing, by printing and sintering porous material solution without using vacuum process, and has low reflection factor and high absorption ratio equivalent to those of gold black. DESCRIPTION OF DRAWINGS - The figure shows a schematic view of carbon porous material film.

Carbon particles (2)

Pores (3)

Carbon matrix (4)

## TECHNOLOGY FOCUS:

ELECTRONICS - Preferred Properties: The pore (3) size of the porous material is hundreds of nm to several microns. The porous material precursor solution is a solution prepared by dispersing carbon particles (2) and resin particles in a dispersion medium containing a meso-porous skeletal material, a surface active agent, and water. The mesoporous skeletal material is metal alkoxide. Preferred Methods: Application is ink jet printing.

FILE SEGMENT: CPI; EPI

MANUAL CODE: CPI: L04-E05C  
 EPI: S03-A03; T04-G02J; U14-E01A; U14-E01B;  
 U14-E01C

L20 ANSWER 3 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 2005-335300 [35] WPIX  
 DOC. NO. CPI: C2005-104148 [35]  
 DOC. NO. NON-CPI: N2005-274223 [35]  
 TITLE: Functional porous film useful in sensor e.g. carbon dioxide sensor comprises porous body having pore and functional portion disposed in pore and having different function from porous body  
 DERWENT CLASS: E36; J04; L03; P53; S03  
 INVENTOR: EGASHIRA M; HYODO T; ONO S; SHIMIZU Y  
 PATENT ASSIGNEE: (DENK-C) TDK CORP  
 COUNTRY COUNT: 37

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 1528613	A1	20050504	(200535)*	EN	43 [21]	
JP 2005132644	A	20050526	(200535)	JA	20	
JP 2005133114	A	20050526	(200535)	JA	16	
US 20050109617	A1	20050526	(200535)	EN		
CN 1611349	A	20050504	(200558)	ZH		
KR 2005040714	A	20050503	(200637)	KO		

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## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 1528613 A1		EP 2004-25548	20041027
JP 2005132644 A		JP 2003-367759	
20031028			
JP 2005133114 A		JP 2003-367760	
20031028			
KR 2005040714 A		KR 2004-83672	20041019
US 20050109617 A1		US 2004-972561	
20041026			
CN 1611349 A		CN 2004-10086983	
20041027			

PRIORITY APPLN. INFO: JP 2003-367759 20031028  
 JP 2003-367760 20031028

## INT. PATENT CLASSIF.:

MAIN:	B22F003-11
IPC RECLASSIF.:	B22F0003-11 [I,A]; B22F0003-11 [I,A]; B22F0003-11 [I,C]; B22F0003-11 [I,C]; B22F0007-02 [I,C]; B22F0007-04 [I,A]; C04B0038-06 [I,A]; C04B0038-06 [I,C]; C22C0001-08 [I,A]; C22C0001-08 [I,C]; G01N0027-02 [I,A]; G01N0027-02 [I,C]; G01N0027-04 [I,A]; G01N0027-04 [I,C]; G01N0027-12 [I,A]; G01N0027-12 [I,C]; G01N0027-22 [I,A]; G01N0027-22 [I,C]; G01N0027-406 [I,A]; G01N0027-406 [I,C]; G01N0027-407 [I,A]; G01N0027-407 [I,C]; G01N0027-409 [I,A]; G01N0027-409 [I,C]; G01N0027-41 [I,A]; G01N0027-41 [I,C]; G01N0027-416 [I,A]; G01N0027-416 [I,C]; G01N0027-416 [I,C]; G01N0027-49 [I,A]; G01N0027-49 [I,C]; H01M0004-86 [I,A]; H01M0004-86 [I,C];

H01M0004-88 [I,A]; H01M0004-88 [I,C]

## BASIC ABSTRACT:

EP 1528613 A1 UPAR 20051222

NOVELTY - A functional porous film (10) comprises a porous body (11) having a pore (11A) and a structure in which several particles (11B) are connected to one another, and a functional portion (12) dispersed in particle form and having a different function from the porous body.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following: (1) manufacturing functional porous film involving forming a precursor film including a spherical pore-forming powder (e.g. resin powder) on which a material of functional portion is deposited and a material powder of the porous body, and heating the precursor film to remove the pore-forming powder and sinter the material powder of the porous body; and (2) manufacturing a sensor.

USE - In a sensor (claimed) such as carbon dioxide sensor, hydrogen sensor, carbon monoxide sensor, nitrogen oxide sensor, humidity sensor, pH sensor and ion sensor.

ADVANTAGE - The size or shape of the pore can be controlled with high precision by organic powder. Therefore, the porosity and specific surface area can be increased and the uniformity of the size and shape of the pore can be improved. The downsizing of sensor device can be achieved and the performance can be improved. The response speed and the recovery speed of the sensor can be improved.

DESCRIPTION OF DRAWINGS - The figure shows a sectional view of the functional porous film.

functional porous film (10) porous body (11)  
pore (11A)  
particles (11B)  
functional portion. (12)

FILE SEGMENT: CPI; GMPI; EPI

MANUAL CODE: CPI: E11-Q03J; E31-A03; E31-A05; E31-H05; E31-N05B;  
E31-N05C; J04-C02A; J04-C04A; L03-E05C  
EPI: S03-E03C

L20 ANSWER 4 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

ACCESSION NUMBER: 2004-775998 [76] WPIX

DOC. NO. CPI: C2004-271767 [76]

DOC. NO. NON-CPI: N2004-611283 [76]

TITLE: Metal-supported porous carbon  
film for electrode of fuel cell comprises  
fine metal particles with specified mean  
particle diameter dispersed and  
supported on pore surface walls

DERWENT CLASS: L03; X16

INVENTOR: FUJII Y; MATSUO M; OHYA S; OYA N; TAKAGI; TAKAGI J  
(UBEI-C) UBE IND LTD; (FUJI-I) FUJII Y; (MATS-I)

PATENT ASSIGNEE: MATSUO M; (OHYA-I) OHYA S; (TAKA-I) TAKAGI J

COUNTRY COUNT: 106

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2004095614	A2	20041104	(200476)*	EN	27[8]	
JP 2004335459	A	20041125	(200477)	JA	13	
US 20070077460	A1	20070405	(200726)	EN		

## APPLICATION DETAILS:

→ PGPub  
9/10/550,902

PATENT NO	KIND	APPLICATION	DATE
WO 2004095614 A2 20040408		WO 2004-JP5092	
JP 2004335459 A 20040416		JP 2004-121247	
US 20070077460 A1 20040408		WO 2004-JP5092	
US 20070077460 A1		US 2005-550902	20050928

PRIORITY APPLN. INFO: JP 2003-113978 20030418

INT. PATENT CLASSIF.:

IPC ORIGINAL: B01J0021-00 [I,C]; B01J0021-18 [I,A]; H01M0004-00 [I,A]; H01M0004-00 [I,C]; H01M0008-00 [I,A]; H01M0008-00 [I,C]  
 IPC RECLASSIF.: C01B0031-00 [I,C]; C01B0031-02 [I,A]; H01M0004-86 [I,A]; H01M0004-86 [I,C]; H01M0004-86 [I,C]; H01M0004-88 [I,A]; H01M0004-88 [I,A]; H01M0004-88 [I,C]; H01M0004-88 [I,C]; H01M0004-90 [I,C]; H01M0004-90 [I,C]; H01M0004-92 [I,A]; H01M0004-92 [I,A]; H01M0008-10 [I,A]; H01M0008-10 [I,C]; H01M0008-10 [I,C]

BASIC ABSTRACT:

WO 2004095614 A2 UPAB: 20060122

NOVELTY - Metal-supported porous carbon film comprises fine metal particles with a mean particle diameter of 0.7-20 nm dispersed and supported on pore surface walls. The fine metal particles are produced by chemical reduction of metal compound with a reducing agent using a catalyst on the pore surfaces of the porous carbon film. About 15 - 95 % of the metal fine particles consist of multiply twinned particles.

USE - For electrode and membrane-electrode assembly of fuel cell (claimed).

ADVANTAGE - It is possible to easily support metal fine particles by employing only a very gentle stirring procedure. The growth of the metal fine particles is in the form of epitaxial growth, and the resulting metal fine particles have very high crystallinity while the particles are also physicochemically stable, thereby allowing the fine metal particles to be finely dispersed and supported on the pore walls in a uniform manner. Precipitation of the metal fine particles occurs simultaneously across the whole surface without a location-dependent time lag, and the particle sizes of the metal fine particles in the support are monodispersively arranged, with the particle sizes freely controlled on the nanoscale. Multiply twinned particles have particle surfaces composed of highly surface active, high-density crystal faces and, because of their shape stability which allows them to maintain their initial structure for long periods, enables to obtain a stably operating fuel cell with overall enhanced properties. It is possible to obtain the metal-supported porous carbon film where the support structure is such that metal fine particles having a controlled particle size are uniformly supported to allow effective utilization of the metal-based catalyst, and the fabrication steps are simple. TECHNOLOGY FOCUS:

METALLURGY - The metal fine particles are composed mainly of platinum. The catalyst is a palladium compound supported on a carbon film.

FILE SEGMENT: CPI; EPI  
 MANUAL CODE: CPI: L03-E04B  
 EPI: X16-E06

L20 ANSWER 5 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 2004-607473 [59] WPIX  
 DOC. NO. CPI: C2004-220132 [59]

**TITLE:** Coated textile for clothes, comprises resin layer containing polyurethane resin(s) formed on fiber textile, and has preset moisture permeability and waterproofness

**DERWENT CLASS:** A14; A25; A87; E12; F06

**INVENTOR:** FURUYA T; OCHI S

**PATENT ASSIGNEE:** (TOYM-C) TOYOB0 KK

**COUNTRY COUNT:** 1

**PATENT INFORMATION:**

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
JP 2004232099	A	20040819	(200459)*	JA	7[0]	
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**APPLICATION DETAILS:**

PATENT NO	KIND	APPLICATION	DATE
JP 2004232099 A		JP 2003-19374	20030128

PRIORITY APPLN. INFO: JP 2003-19374 20030128

**INT. PATENT CLASSIF.:**

IPC RECLASSIF.: D06M0015-21 [I,C]; D06M0015-31 [I,A]; D06M0015-37 [I,C]; D06M0015-564 [I,A]

**BASIC ABSTRACT:**

JP 2004232099 A UPAB: 20050531

NOVELTY - A coated textile comprises a resin layer containing polyurethane resin(s) formed on the fiber textile. The textile has moisture permeability of 15000 g/m<sup>2</sup>.24 hours or more by potassium acetate method and waterproofness of 5000 mmH<sub>2</sub>O or more.

DETAILED DESCRIPTION - The highest attainment temperature and highest attainment humidity in clothes measured by perspiration simulation apparatus are 35 degrees C or less and 80 % RH or less, respectively.

USE - For clothes, knitted fabric and non-woven fabric.

ADVANTAGE - The coated textile has high water-proof capacity and high degree moisture permeability. The textile provides clothes with comfortable feeling of wear. The temperature and humidity of clothes are maintained favorably even during perspiration. TECHNOLOGY FOCUS:

TEXTILES AND PAPER - Preferred Textile: The coated textile contains organic microparticles having 1 mmol/g or more of salt type carboxyl groups. The microparticles contains cross-linked structure obtained by chemical alteration of nitrile group in acrylonitrile group polymer containing 50 weight% or more of acrylonitrile by hydrazine, divinylbenzene or triaryl isocyanurate. The salt type carboxyl group is introduced to the cross-linked structure by hydrolysis. Water-repellent processing is performed to the fiber textile before coating resin layer.

POLYMERS - Preferred Resin: The resin layer comprises two or more types of polyurethane resin having different solidification value. The solidification value of each polyurethane resin is in the range of 5-12. The difference between the solidification values of polyurethane resin is 0.5 or more.

**EXTENSION ABSTRACT:**

EXAMPLE - Hydrazine and raw material microparticle water dispersion containing (in parts weight) acrylonitrile (450), methyl acrylate (40), p-styrene sulfonic acid soda (16) and water (118) were cross-linked and hydrolyzed in sodium hydroxide, to obtain moisture absorptive and releasing organic microparticles of mean particle diameter of 0.5 micrometers and swelling

degree of 80 %. Ester group polyurethane resin (75), ether group polyurethane resin (35), N,N'-dimethylformamide (20), organic microparticles (10) and Coronate HL (TM) (3) were mixed, to obtain urethane resin solution. A nylon textile fabric was subjected to refinement, dyeing, water-repellent processing and drying. The resin solution was coated on fabric, and was induced to 15 degrees C water. Solidification was carried out for 3 minutes, and the fabric was dried at 130 degrees C. A resin porous film of thickness 70 micrometers was formed. The coated textile had waterproofness of 10000 mmH2O, moisture permeability of 16000 g/m<sup>2</sup>.24 hours, dew formation amount of 5 g/m<sup>2</sup> and friction coefficient of 0.3. The temperature and humidity in the clothes were 33 degrees C and 57 % RH, respectively.

FILE SEGMENT: CPI  
 MANUAL CODE: CPI: A05-G01E; E07-D13B; E10-J02B4; E31-H05;  
 F03-E01

L20 ANSWER 6 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 2002-743732 [81] WPIX  
 CROSS REFERENCE: 2003-147433; 2007-360691  
 DOC. NO. CPI: C2002-210791 [81]  
 DOC. NO. NON-CPI: N2002-585880 [81]  
 TITLE: Electrode base material for fuel cells comprises  
 porous carbon film  
 having fine continuous holes of preset  
 average pore size and porosity  
 DERWENT CLASS: A85; L03; X16  
 INVENTOR: OYA N; YAO S  
 PATENT ASSIGNEE: (UBEI-C) UBE IND LTD  
 COUNTRY COUNT: 1

#### PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
JP 2002170574	A	20020614	(200281)*	JA	8[5]	
<--						

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2002170574 A		JP 2001-78497	20010319

PRIORITY APPLN. INFO: JP 2000-287361 20000921

INT. PATENT CLASSIF.:

IPC RECLASSIF.: B01J0021-00 [I,C]; B01J0021-18 [I,A]; B01J0023-42 [I,A]; B01J0023-42 [I,C]; B01J0032-00 [I,A]; B01J0032-00 [I,C]; C01B0031-00 [I,C]; C01B0031-04 [I,A]; C04B0035-52 [I,A]; C04B0035-52 [I,C]; H01M0004-88 [I,A]; H01M0004-88 [I,C]; H01M0004-96 [I,A]; H01M0004-96 [I,C]; H01M0008-10 [I,A]; H01M0008-10 [I,C]

#### BASIC ABSTRACT:

JP 2002170574 A UPAB: 20050903  
 NOVELTY - An electrode base material comprises a porous carbon film having fine continuous holes with average pore size of 0.05-10 microns and porosity of 15-85%.  
 DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:  
 (1) metal micro-dispersed carbon film structure which has metal supported as nano-order microparticle; and

(2) carbon structure supporting metal catalyst comprising the metal micro-dispersed carbon film structure.

USE - Used for fuel cells such as solid polymer electrolyte group fuel cell or phosphoric acid group fuel cell.

ADVANTAGE - The gas flow is performed uniformly using the carbon film structure. The carbon film structure has high electroconductivity and thermal conductivity. TECHNOLOGY FOCUS:

ORGANIC CHEMISTRY - Preferred Electrode Base Material: The surfaces of the carbon film except the pores are flat. The carbon film has graphitization rate of 50% or more. The carbon film is obtained by heat carbonizing a porous heat resistant film under anaerobic atmosphere. Especially, several heat resistant polymer films are heat carbonized to form laminate of carbon film.

POLYMERS - Preferred Polymer: The heat resistant polymer is polyimide having biphenyl tetracarboxylic acid or its anhydride as a monomer component.

FILE SEGMENT: CPI; EPI  
MANUAL CODE: CPI: A05-J01B; A12-E06A; L03-E04B  
EPI: X16-C01; X16-E06

L20 ANSWER 7 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
ACCESSION NUMBER: 2000-535617 [49] WPIX  
DOC. NO. CPI: C2000-160125 [49]  
DOC. NO. NON-CPI: N2000-396259 [49]  
TITLE: Manufacturing of toner  
DERWENT CLASS: A89; G08; P84; S06  
INVENTOR: ITABASHI H  
PATENT ASSIGNEE: (CANO-C) CANON KK  
COUNTRY COUNT: 1

#### PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
JP 2000194159	A	20000714	(200049)*	JA	13[2]	
<--						

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2000194159 A		JP 1998-371310	
19981225			

PRIORITY APPLN. INFO: JP 1998-371310 19981225

INT. PATENT CLASSIF.:

IPC RECLASSIF.: G03G0009-087 [I,A]; G03G0009-087 [I,C]

#### BASIC ABSTRACT:

JP 2000194159 A UPAB: 20050705

NOVELTY - In the manufacturing of toner utilizing a polymerization process comprising adding a monomer composition including at least a polymerizable monomer in a reaction medium mainly composed of organic solvent, dissolving at least the polymerizable monomer in the reaction medium, polymerizing the polymerizable monomer, and precipitating the polymer produced by the polymerization from the reaction medium to produce the toner particles, a dispersion phase A including at least a coloring agent and a polymerizable monomer and a continuous phase B including at least a polymerization starting agent, the dispersion stabilizer and an organic solvent exist in a state that they are separated by a film C having pores, the continuous phase B is heated

at a polymerization temperature, and then the dispersion phase A is gradually extruded to the continuous base B side through the pores of the film C to polymerize the same while mixing both phases.

USE - Effectively used in the toner jet image formation by an electrophotographic process.

FILE SEGMENT: CPI; GMPI; EPI  
MANUAL CODE: CPI: A02-A00A; A08-S01; A10-B01; A10-D; A12-L05C2;  
G06-G05  
EPI: S06-A04C1

L20 ANSWER 8 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
ACCESSION NUMBER: 1996-041542 [05] WPIX  
CROSS REFERENCE: 1991-304836  
DOC. NO. CPI: C1996-014100 [05]  
DOC. NO. NON-CPI: N1996-034827 [05]  
TITLE: Void-containing polyester film for labels and posters  
- comprises film base material with  
dispersed thermoplastic resin  
particles and fine voids formed around the  
particles, and is soft enough to allow  
printing on it  
DERWENT CLASS: A23; A94; P73  
INVENTOR: HAMANO A; HATTORI K; ITO K; KUMANO K; KUZE K;  
OKUDAIRA T; TAGA A  
PATENT ASSIGNEE: (TOYM-C) TOYO BOSEKI KK  
COUNTRY COUNT: 1

#### PATENT INFORMATION:

PATENT NO	KIND DATE	WEEK	LA	PG	MAIN IPC
EP 688814	A2 19951227 (199605)*	EN	18	[7]	
<--					
EP 688814	A3 19960131 (199621)	EN			
<--					
EP 688814	B1 20030702 (200345)	EN			
<--					
DE 69133289	E 20030807 (200359)	DE			
<--					

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 688814 A2 19910409		EP 1995-114048	
DE 69133289 E 19910409		DE 1991-69133289	
EP 688814 A3 Div Ex 19910409		EP 1991-105622	
EP 688814 B1 Div Ex 19910409		EP 1991-105622	
EP 688814 A3 19910409		EP 1995-114048	
EP 688814 B1 19910409		EP 1995-114048	
DE 69133289 E 19910409		EP 1995-114048	

#### FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 688814 B1	Div ex	EP 451797 A
DE 69133289 E	Based on	EP 688814 A

PRIORITY APPLN. INFO: JP 1991-32067 19910130  
                           JP 1990-95941 19900410

## INT. PATENT CLASSIF.:

IPC RECLASIF.: C08J0005-18 [I,A]; C08J0005-18 [I,C]

## BASIC ABSTRACT:

EP 688814 A2 UPAB: 20060111 A void-containing polyester-type film, obtained by drawing a resin compsn. sheet containing at least a polyester and at least a thermoplastic resin in at least one direction, comprises: (a) a film base material comprising the polyester; (b) fine particles of the thermoplastic resin dispersed in the film base material; and (c) fine voids formed around the fine particles. The fine particles are extended in the direction of the drawing. They have a longitudinal dia. of 1-50 µm, a thickness of 10 µm or less and a ratio of longitudinal dia.:thickness of 2-100. Also claimed are: (1) a laminate having an outer surface made of polyester, polyurethane, polyacrylic or a mixture placed on at least one side of the above polyester film; and (2) a recording paper containing the above film.

USE - The material can be used as a base material for labels, posters, recording paper (claimed), wrapping paper, etc.

ADVANTAGE - The film is light in weight, reducing its price/unit area. It is soft enough to allow printing (claimed) or typing (claimed) on it, or even writing (claimed) with a pencil or ball-point pen, and white enough to have satisfactory opacity. It has higher surface energy than a film containing uniform voids and is more resistant to having its surface layer peeled off.

## DOCUMENTATION ABSTRACT:

EP688814

A void-containing polyester-type film, obtained by drawing a resin compsn. sheet containing at least a polyester and at least a thermoplastic resin in at least one direction, comprises:

(a) a film base material comprising the polyester;

(b) fine particles of the thermoplastic resin

dispersed in the film base material; and

(c) fine voids formed around the fine particles.

The fine particles are extended in the direction of the drawing. They have a longitudinal dia. of 1-50 µm, a thickness of 10 µm or less and a ratio of longitudinal dia.:thickness of 2-100.

Also claimed are:

(1) a laminate having an outer surface made of polyester, polyurethane, polyacrylic or a mixture placed on at least one side of the above polyester film; and

(2) a recording paper containing the above film.

USE

The material can be used as a base material for labels, posters, recording paper (claimed), wrapping paper, etc.

ADVANTAGE

The film is light in weight, reducing its price/unit area. It is soft enough to allow printing (claimed) or typing (claimed) on it, or even writing (claimed) with a pencil or ball-point pen, and white enough to have satisfactory opacity. It has higher surface energy than a film containing uniform voids and is more resistant to having its surface layer peeled off.

**EXAMPLE**

A resin compsn. comprising 86 weight% poly(ethylene terephthalate) of intrinsic viscosity 0.62; 10 weight% of polystyrene of melt flow index = 1.8 g/10 min. and 4 weight% of anatase TiO<sub>2</sub> was melt-extruded at 285 °C at 8.5 m/sec. from a T-die having a 1.0 mm slit. The non-drawn sheet of thickness 600 µm was drawn at 80 °C at a draw ratio of 3.5 in the direction of its length, then at 130 °C at a draw ratio of 5 in the transverse direction, and then fixed at 220 °C while relaxing the sheet at a rate of 3%.

The surface layer (thickness 5 µm) contained 1% voids, other parts contained 18% voids and the average void content was 16 volume%. The non-drawn sheet contained particles of average size 4.8 µm at the surface and 0.6 µm elsewhere. A comparative non-drawn sheet was prepared as above using a T-die having a 4.0 mm slit, then drawn as above. The surface layer contained 12% voids, other parts contained 20% voids and the average void content was 19 volume%. The non-drawn sheet contained uniformly dispersed particles of average size 5.9 µm.

The films had an apparent specific gravity of 1.16 and 1.12 resp.; a light transmittance of 15% and 14% resp. and a thickness of 52 and 54 µm resp. Surface strength was measured by a tape-peeling test. Most of the surface layer of the example was not peeled off and all of the surface layer of the comparative was peeled off. (JR)

**PREFERRED**

The film contains 1-40, (pref. 5-30) weight% of the thermoplastic resin and an average void percentage of 8-50, (pref. 8-30) volume%.

The thermoplastic resin is selected from a gp. containing polystyrene, polyolefin, polyamide, polyacrylic, cellulose, petroleum, synthetic and natural rubber, polycarbonate polysulphone polyacrylate and polyether type resins or may be a mixture (pref. is a polystyrene containing 5.0 weight% or less n-hexane extractables). The polyester is obtained by reacting ethylene glycol with terephthalic acid or a derivative

The outer surface layer of the laminate comprises a colouring agent, matt agent, antistatic agent, UV radiation absorber, a crosslinking agent or a mixture. This layer is formed by applying a resin solution, emulsion or dispersion on the polyester film. The recording paper is suitable for transfer, printing, typing and writing on, and has adhesiveness to ink and coating agents.

FILE SEGMENT:

CPI; GMPI

MANUAL CODE:

CPI: A05-E01D3; A07-A03A; A07-A03D; A11-B02A;  
A12-S06A

L20 ANSWER 9 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

ACCESSION NUMBER: 1993-036190 [04] WPIX

DOC. NO. CPI: C1993-016397 [21]

TITLE: Mono-disperse single and double emulsions - contain particles of mean dia. 0.3 to 40 microns and are free from particles with mean dia. as small as half mean dia. or less

DERWENT CLASS: J02

INVENTOR: KUKIZAKI M; NAKAJIMA T; NAKASHIMA T; SHIMIZU M

PATENT ASSIGNEE: (MIYA-N) MIYAZAKI KEN; (MIYA-N) MIYAZAKI-KEN

COUNTRY COUNT: 13

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 9300156	A1	19930107	(199304)*	JA	50 [15]	
EP 546174	A1	19930616	(199324)	EN	28 [15]	<--
JP 05220382	A	19930831	(199339)	JA	14 [15]	<--
US 5326484	A	19940705	(199426) #	EN	23 [15]	<--
EP 546174	A4	19930915	(199527)	EN		<--
EP 546174	B1	19971029	(199748)	EN	26 [15]	<--
DE 69128087	E	19971204	(199803)	DE		<--
JP 2733729	B2	19980330	(199818)	JA	14 [0]	<--

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9300156 A1		WO 1991-JP882	19910629
EP 546174 A4		EP 1991-911947	
DE 69128087 E		DE 1991-69128087	
19910629			
EP 546174 A1		EP 1991-911947	
19910629			
EP 546174 B1		EP 1991-911947	
19910629			
DE 69128087 E		EP 1991-911947	
19910629			
EP 546174 A1		WO 1991-JP882	19910629
EP 546174 B1		WO 1991-JP882	19910629
DE 69128087 E		WO 1991-JP882	19910629
JP 05220382 A		JP 1992-211964	
19920629			
JP 2733729 B2		JP 1992-211964	
19920629			
US 5326484 A		US 1992-906282	
19920629			

Formatted: French (France)

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 69128087 E	Based on	EP 546174 A
JP 2733729 B2	Previous Publ	JP 05220382 A
EP 546174 A1	Based on	WO 9300156 A
EP 546174 B1	Based on	WO 9300156 A
DE 69128087 E	Based on	WO 9300156 A

PRIORITY APPLN. INFO: WO 1991-JP882  
US 1992-906282

19910629

19920629

## INT. PATENT CLASSIF.:

MAIN:	B01F003-08
SECONDARY:	B01F017-00

IPC RECLASSIF.: B01F0003-08 [I,A]; B01F0003-08 [I,C]; B01F0005-00 [I,C]; B01F0005-04 [I,A]; B01F0005-04 [I,C]; B01F0005-10 [I,A]; B01J0013-00 [I,A]; B01J0013-00 [I,C]

## BASIC ABSTRACT:

WO 1993000156 A1 UPAB: 20050823 Monodisperse single emulsion contains particles with a mean dia. within the range of 0.3-40 micron, and being free from particles with a dia. as small as 50% of the mean dia. or less and a monodisperse double emulsion containing particles with a mean dia. within the range of 0.3-40 micron and an internal phase concentration which is uniformly regulated to be within the range of 1-70%

FILE SEGMENT: CPI

MANUAL CODE: CPI: J02-A

L20 ANSWER 10 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

ACCESSION NUMBER: 1991-305137 [42] WPIX

CROSS REFERENCE: 1995-321744; 1996-012097

DOC. NO. CPI: C1991-132138 [16]

TITLE: Water-in-oil type emulsion production - by dispersing in an aqueous phase at lower pressure into a fatty phase through a hydrophilic microporous membrane pretreated with fatty phase

DERWENT CLASS: D13; D21

INVENTOR: ASANO Y; FUJIMOTO M; KATO M; KATO R; KUMAZAWA R; OKONOGI S; SOTOYAMA K; TAKAHASHI K; TOYAMA K;

PATENT ASSIGNEE: (MOMI-C) MORINAGA & CO LTD; (MORG-C) MORINAGA MILK CO LTD; (MORG-C) MORINAGA MILK IND CO LTD; (OKON-I) OKONOGI S

COUNTRY COUNT: 12

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 452140	A	19911016	(199142)*	EN		
<--						
CA 2040241	A	19911012	(199201)	EN		
<--						
JP 03293026	A	19911224	(199208)	JA		
<--						
JP 04118044	A	19920420	(199222)	JA	6	
<--						
JP 04118045	A	19920420	(199222)	JA	6	
<--						
JP 04210553	A	19920731	(199240)	JA	7[1]	
<--						
JP 04258251	A	19920914	(199243)	JA	7[1]	
<--						
US 5279847	A	19940118	(199404)# EN		17[1]	
<--						
JP 2773966	B2	19980709	(199832)	JA	6	
<--						
JP 2773967	B2	19980709	(199832)	JA	6	
<--						
EP 452140	B1	19981230	(199905)	EN		
<--						
DE 69130685	E	19990211	(199912)	DE		
<--						

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 452140 A		EP 1991-303236	
19910411			
JP 03293026 A		JP 1990-95368	19900411
JP 03293026 A		JP 1990-95368	19900531
JP 03293026 A		JP 1990-238365	
19900907			
JP 04118044 A		JP 1990-238365	
19900907			
JP 2773966 B2		JP 1990-238365	
19900907			
JP 03293026 A		JP 1990-238366	
19900907			
JP 04118045 A		JP 1990-238366	
19900907			
JP 2773967 B2		JP 1990-238366	
19900907			
JP 03293026 A		JP 1990-401418	
19901211			
JP 04210553 A		JP 1990-401418	
19901211			
JP 03293026 A		JP 1991-15567	19910206
JP 04258251 A		JP 1991-15567	19910206
DE 69130685 E		DE 1991-69130685	
19910411			
EP 452140 B1		EP 1991-303236	
19910411			
DE 69130685 E		EP 1991-303236	
19910411			
US 5279847 A		US 1991-683182	
19910411			
EP 452140 B1 Related to		EP 1995-200749	
19910411			
EP 452140 B1 Related to		EP 1995-200750	
19910411			

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 69130685 E	Based on	EP 452140 A
EP 452140 B1	Related to	EP 672351 A
EP 452140 B1	Related to	EP 685167 A
JP 2773966 B2	Previous Publ	JP 04118044 A
JP 2773967 B2	Previous Publ	JP 04118045 A

PRIORITY APPLN. INFO:	JP 1991-15567	19910206
	JP 1990-95368	19900411
	JP 1990-238365	19900907
	JP 1990-238366	19900907
	JP 1990-401418	19901211
	JP 1991-15567U	19910206
	US 1991-683182	19910411

## INT. PATENT CLASSIF.:

MAIN:	A23D007-02
SECONDARY:	A23D007-00; B01F003-08
IPC RECLASSIF.:	A23D0007-00 [I,A]; A23D0007-00 [I,C]; A23D0007-015

[I,A]; A23D0007-015 [I,A]; A23D0007-015 [I,C];  
 A23D0007-015 [I,C]; A23D0007-02 [I,A]; A23D0007-02  
 [I,A]; A23D0007-02 [I,C]; A23D0007-02 [I,C];  
 A23D0007-06 [I,A]; A23D0007-06 [I,C]; B01F0003-08  
 [I,A]; B01F0003-08 [I,A]; B01F0003-08 [I,A];  
 B01F0003-08 [I,C]; B01F0003-08 [I,C]; B01F0003-08  
 [I,C]; B01J0013-00 [I,A]; B01J0013-00 [I,A];  
 B01J0013-00 [I,C]; B01J0013-00 [I,C]

**BASIC ABSTRACT:**

EP 452140 A UPAB: 20060107 Production of a water-in-oil (w/o) type emulsion, comprises dispersing in an aqueous phase at a low pressure into a fatty phase through a hydrophilic microporous membrane previously treated with the fatty phase.

Also claimed is a low-fat spread comprising the emulsions and a method for producing oil-in-water-in-oil (o1/w/o2) emulsion and oil-in-water (o/w) emulsion.

**USE/ADVANTAGE** - The emulsions are useful for foodstuffs, cosmetics, chemicals, feedstuffs etc. The process of the invention is hygienic and permits efficient production of stable emulsion with uniform particle sizes of a dispersed phase.

FILE SEGMENT: CPI

MANUAL CODE: CPI: D03-C; D03-G; D03-H01T; D08-B

L20 ANSWER 11 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

ACCESSION NUMBER: 1990-002085 [01] WPIX

DOC. NO. CPI: C1990-000875 [21]

DOC. NO. NON-CPI: N1990-001480 [21]

TITLE: Humidity sensor - has porous silica  
film containing dispersed  
carbon particles

DERWENT CLASS: J04; L03; S03

INVENTOR: IKEJIRI M; YANAGISAWA M

PATENT ASSIGNEE: (SHIH-C) SEIKO EPSON CO LTD; (SHIH-C) SEIKO EPSON  
CORP

COUNTRY COUNT: 4

**PATENT INFORMATION:**

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
GB 2220074	A	19891228	(199001)*	EN	36[15]	
<--						
JP 02132803	A	19900522	(199026)	JA		
<--						
US 5001453	A	19910319	(199114)	EN		
<--						
GB 2220074	B	19920108	(199202)	EN		
<--						
KR 9402635	B1	19940326	(199602)	KO		
<--						

**APPLICATION DETAILS:**

PATENT NO	KIND	APPLICATION	DATE
GB 2220074 A		GB 1989-14537	19890623
JP 02132803 A 19880627		JP 1988-158788	
JP 02132803 A 19880718		JP 1988-178587	

JP 02132803 A 19880718	JP 1988-178588
JP 02132803 A 19880927	JP 1988-241621
KR 9402635 B1 US 5001453 A 19890623	KR 1989-8684 19890623 US 1989-370725

PRIORITY APPLN. INFO: JP 1988-241621	19880927
JP 1988-158788	19880627
JP 1988-178587	19880718
JP 1988-178588	19880718

INT. PATENT CLASSIF.:  
 IPC RECLASSIF.: G01N0027-12 [I,A]; G01N0027-12 [I,A]; G01N0027-12  
 [I,C]; G01N0027-12 [I,C]; H01C0007-00 [I,A];  
 H01C0007-00 [I,C]

BASIC ABSTRACT:  
 GB 2220074 A UPAB: 20050429 Humidity sensor comprises: a support of insulating material; electrodes on the support; and a porous SiO<sub>2</sub> film containing dispersed C particles. The support may comprise an insulating substrate or an insulating substrate carrying an SiO<sub>2</sub> support film.  
 ADVANTAGE - Sensor provides reliable and accurate measurements over a wide humidity range and with low temperature dependence.

FILE SEGMENT: CPI; EPI  
 MANUAL CODE: CPI: J04-C04; L03-B01A3  
 EPI: S03-E02

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 FILE COVERS 1898 TO DATE.

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 THE ABSTRACT (/AB), BASIC INDEX (/BI) AND TITLE (/TI) FIELDS >>>

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L36 ANSWER 1 OF 20 INSPEC (C) 2008 IET on STN  
 ACCESSION NUMBER: 2006:9219668 INSPEC Full-text  
 TITLE: Antibacterial evaluation of carbon-ceramic  
 composites  
 AUTHOR: Yamamoto, O.; Nakagawa, Z. (Center for  
 Geo-environ. Sci., Akita Univ., Japan)  
 SOURCE: Sohn International Symposium. Advanced  
 Processing of Metals and Materials. Proceedings  
 of the International Symposium. New, Improved  
 and Existing Technologies: Non-Ferrous Materials  
 Extraction and Processing, 2006, p. 545-53 of  
 xcv+899 pp., 20 refs.  
 Editor(s): Kongoli, F.; Reddy, R.G.  
 ISBN: 978 0 87339 637 0  
 Published by: TMS (Minerals, Metals & Materials  
 Society), Warrendale, PA, USA  
 Conference: Sohn International Symposium.  
 Advanced Processing of Metals and Materials.  
 Proceedings of the International Symposium. New,  
 Improved and Existing Technologies: Non-Ferrous  
 Materials Extraction and Processing, San Diego,  
 CA, USA, 27-31 Aug. 2006  
 DOCUMENT TYPE: Conference; Conference Article  
 TREATMENT CODE: Practical  
 COUNTRY: United States  
 LANGUAGE: English  
 ABSTRACT: In antibacterial evaluation of carbon-ceramic composites, we prepared  
 two type composites with emphasis on carbon-ZnO system; one was porous carbon  
 materials containing ZnO nano-particles and another was porous ZnO coated with

carbon thin film. Porous carbon samples containing ZnO at highly dispersed state were prepared by carbonizing the resin exchanged by Zn<sup>2+</sup> ion. Porous ZnO coated with carbon thin film was obtained by the pyrolysis of poly (vinyl alcohol). Antibacterial activity of these composites obtained was evaluated by measuring the changes in electrical conductivity with bacteria growth. The antibacterial activity on the composites increased with the increase of the amount of ZnO in composite and decreased with the increase of carbonization temperature. The antibacterial activity for *Staphylococcus aureus* was found to be stronger than that for *Escherichia coli*. No activity of the carbon samples without ZnO was observed. The occurrence of antibacterial activity was supposed to be due to the generation of hydrogen peroxide from ZnO in composite. In the present work, antibacterial activity of carbon-ZnO composites was studied in the details.

CLASSIFICATION CODE: E1525 Industrial processes; E3628 Biotechnology

industry; E1710 Engineering materials

CONTROLLED TERM: biotechnology; carbon; ceramics; composite materials; electrical conductivity; microorganisms; nanoparticles; pyrolysis; resins; zinc compounds

SUPPLEMENTARY TERM: antibacterial evaluation; carbon-ceramic composites; porous carbon materials; ZnO nanoparticles; ZnO coated carbon thin film; dispersed state; resin; pyrolysis; poly (vinyl alcohol); electrical conductivity; bacteria growth; carbonization temperature; *Staphylococcus aureus*; *Escherichia coli*; hydrogen peroxide; C-ZnO

CHEMICAL INDEXING: C<sub>2</sub>ZnO ss, Zn ss, C ss, O ss

ELEMENT TERMS: O; O<sup>2-</sup>Zn; ZnO; Zn cp; cp; O cp; Zn; Zn<sup>2+</sup>; Zn ip  
2; ip 2

L36 ANSWER 2 OF 20 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:302639 HCPLUS Full-text

DOCUMENT NUMBER: 142:358074

ENTRY DATE: Entered STN: 08 Apr 2005

TITLE: Electrode for fuel cell, its manufacture,

INVENTOR(S): membrane-electrode laminate, and the fuel cell  
Oya, Nobuo; Takagi, Jun

PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

DOCUMENT TYPE: CODEN: JKXXAF

LANGUAGE: Patent

INT. PATENT CLASSIF.: Japanese

MAIN: H01M004-86

SECONDARY: H01M004-88; H01M008-10

CLASSIFICATION: 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2005093217	A	20050407	JP 2003-324476	200309 17
				<--
PRIORITY APPLN. INFO.:			JP 2003-324476	200309 17

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005093217	ICM	H01M004-86
	ICS	H01M004-88; H01M008-10
	IPCI	H01M0004-86 [ICM,7]; H01M0004-88 [ICS,7]; H01M0008-10 [ICS,7]
	IPCR	H01M0004-86 [I,A]; H01M0004-86 [I,C*]; H01M0004-88 [I,A]; H01M0004-88 [I,C*]; H01M0008-10 [I,A]; H01M0008-10 [I,C*]
	FTERM	5H018/AA06; 5H018/AS01; 5H018/BB00; 5H018/BB08; 5H018/DD08; 5H018/EE03; 5H018/EE17; 5H026/AA06

## ABSTRACT:

The electrode has a porous C film structure, catalyst metal particles, and an ion-conductive electrolyte material as main constituent material; and furthermore is combined with a water-repellent material. The electrode is manufactured by depositing and fixing a porous C film on a water-repellent material; dispersing catalyst noble metal fine \*\*\*particles\*\*\* in a dispersant; loading the fine \*\*\*particles\*\*\* on the water-repellent material fixed C film; and coating the electrolyte material on the C film. The laminate is obtained by bonding the above electrode to an electrolyte membrane. The fuel cell has the above electrode as constituent element.

SUPPL. TERM: fuel cell electrode electrolyte membrane laminate;  
manuf noble metal catalyst loaded porous  
C film electrode

INDEX TERM: Polyoxyalkylenes, uses  
ROLE: DEV (Device component use); USES (Uses)  
(fluorine- and sulfo-containing, ionomers; manufacture of  
electrodes containing noble metal catalyst loaded  
porous C films for fuel  
cells)

INDEX TERM: Fuel cell electrodes  
Fuel cells  
(manufacture of electrodes containing noble metal catalyst  
loaded porous C films  
for fuel cells)

INDEX TERM: Fluoropolymers, uses  
ROLE: DEV (Device component use); USES (Uses)  
(manufacture of electrodes containing noble metal catalyst  
loaded porous C films  
for fuel cells)

INDEX TERM: Fluoropolymers, uses  
ROLE: DEV (Device component use); USES (Uses)  
(polyoxyalkylene-, sulfo-containing, ionomers; manufacture  
of electrodes containing noble metal catalyst loaded  
porous C films for fuel  
cells)

INDEX TERM: Ionomers  
ROLE: DEV (Device component use); USES (Uses)  
(polyoxyalkylenes, fluorine- and sulfo-containing;  
manufacture of electrodes containing noble metal catalyst  
loaded porous C films  
for fuel cells)

INDEX TERM: Polyimides, uses  
ROLE: CPS (Chemical process); PEP (Physical,  
engineering or chemical process); TEM (Technical or

engineered material use); PROC (Process); USES (Uses)  
 (porous; manufacture of electrodes containing noble metal  
 catalyst loaded porous C  
 films for fuel cells)

INDEX TERM: Carbonaceous materials (technological products)  
 ROLE: DEV (Device component use); USES (Uses)  
 (porous; manufacture of electrodes containing noble metal  
 catalyst loaded porous C  
 films for fuel cells)

INDEX TERM: 7440-06-4, Platinum black, uses 9002-84-0,  
 PTFE  
 ROLE: DEV (Device component use); USES (Uses)  
 (manufacture of electrodes containing noble metal catalyst  
 loaded porous C films  
 for fuel cells)

L36 ANSWER 3 OF 20 HCPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2003:892223 HCPLUS Full-text  
 DOCUMENT NUMBER: 139:352259  
 ENTRY DATE: Entered STN: 14 Nov 2003  
 TITLE: Aligned carbon nanotube films  
 on porous carriers and a process for  
 producing them  
 INVENTOR(S): Someya, Masao; Fujii, Takashi  
 PATENT ASSIGNEE(S): Mitsubishi Gas Chemical Company, Inc., Japan  
 SOURCE: U.S. Pat. Appl. Publ., 12 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: D01F009-12  
 US PATENT CLASSIF.: 423447300  
 CLASSIFICATION: 49-1 (Industrial Inorganic Chemicals)  
 Section cross-reference(s): 57  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003211029	A1	20031113	US 2003-393364	200303 21
JP 2004002182	A	20040108	JP 2003-120697	200303 20
<--				
PRIORITY APPLN. INFO.:			JP 2002-83044	A 200203 25
<--				

PATENT CLASSIFICATION CODES:  
 PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

US 2003211029	ICM D01F009-12 INCL 423447300 IPCI D01F0009-12 [ICM, 7] IPCR D01F0009-12 [I,C*]; D01F0009-127 [I,A] NCL 423/447.300	
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	ECLA	D01F009/127
JP 2004002182	IPCI	C01B0031-02 [ICM,7]; C01B0031-00 [ICM,7,C*]; B01J0021-12 [ICS,7]; B01J0021-00 [ICS,7,C*]; B01J0023-75 [ICS,7]; B01J0032-00 [ICS,7]; B82B0003-00 [ICS,7]; C01B0033-00 [ICS,7]; C01B0033-12 [ICS,7]; C01F0007-02 [ICS,7]; C01F0007-00 [ICS,7,C*]; H01J0009-02 [ICS,7]; B01J0023-74 [ICS,7]
	IPCR	B82B0003-00 [I,C*]; B82B0003-00 [I,A]; B01J0021-00 [I,C*]; B01J0021-12 [I,A]; B01J0023-75 [I,C*]; B01J0023-75 [I,A]; B01J0032-00 [I,C*]; B01J0032-00 [I,A]; C01B0031-00 [I,C*]; C01B0031-02 [I,A]; C01B0033-00 [I,C*]; C01B0033-00 [I,A]; C01B0033-12 [I,A]; C01F0007-00 [I,C*]; C01F0007-02 [I,A]; H01J0009-02 [I,C*]; H01J0009-02 [I,A]
	FTERM	4G069/AA03; 4G069/AA08; 4G069/BA03A; 4G069/BA03B; 4G069/BC59A; 4G069/BC66A; 4G069/BC67A; 4G069/BC67B; 4G069/BC68A; 4G069/CD10; 4G069/DA06; 4G069/EA01Y; 4G069/FB13; 4G072/AA36; 4G072/AA38; 4G072/BB02; 4G072/GG02; 4G072/GG03; 4G072/HH14; 4G072/JJ26; 4G072/LL05; 4G072/MM01; 4G072/PP17; 4G072/QQ06; 4G072/QQ09; 4G072/RR11; 4G072/RR15; 4G072/UU01; 4G076/AA02; 4G076/AA30; 4G076/AB11; 4G076/BA03; 4G076/BA13; 4G076/BB02; 4G076/BC02; 4G076/BC05; 4G076/BF04; 4G076/BF06; 4G076/CA10; 4G076/CA11; 4G146/AA11; 4G146/AB07; 4G146/AD24; 4G146/AD29; 4G146/AD32; 4G146/BA12; 4G146/BA42; 4G146/BB23; 4G146/BC03; 4G146/BC08; 4G146/BC44; 5C127/BA09; 5C127/BB07; 5C127/CC03; 5C127/CC62; 5C127/CC63; 5C127/CC66; 5C127/CC67; 5C127/DD12; 5C127/DD20; 5C127/DD38; 5C127/DD39; 5C127/DD63; 5C127/DD64; 5C127/EE17

**ABSTRACT:**

Fine catalyst particles are loaded on a sol-gel method porous carrier having fine pores of 0.1-50 nm and a carbon compound is decomposed to form a carbon nanotube film on the carrier that is aligned perpendicular to the carrier surface. The starting sol to be processed by a sol-gel method is a dispersion of fine alumina particles, fine aluminum hydroxide particles, fine silica \*\*\*particles\*\*\* or mixts. thereof. Alternatively, the starting sol may be an aluminum alkoxide, an alkoxy silane, a mixture thereof or a solution of an aluminum alkoxide, an alkoxy silane or a mixture thereof. If desired, a flammable or a thermally decomposable organic compound may be added as a microporous template.

SUPPL. TERM:	aligned carbon nanotube film porous carrier sol gel
INDEX TERM:	Catalysts Sol-gel processing (aligned carbon nanotube films on porous carriers and a process for producing them)
INDEX TERM:	Aromatic hydrocarbons, reactions Hydrocarbons, reactions ROLE: RCT (Reactant); RACT (Reactant or reagent) (aligned carbon nanotube films on porous carriers and a process for producing them)

INDEX TERM: Nanotubes  
   (carbon, film; aligned carbon  
   nanotube films on porous  
   carriers and a process for producing them)

INDEX TERM: Hydrocarbons, reactions  
   ROLE: RCT (Reactant); RACT (Reactant or reagent)  
   (oxygen-containing; aligned carbon nanotube  
   films on porous carriers and a  
   process for producing them)

INDEX TERM: Ceramics  
   (porous carrier; aligned carbon  
   nanotube films on porous  
   carriers and a process for producing them)

INDEX TERM: Hydrocarbons, reactions  
   ROLE: RCT (Reactant); RACT (Reactant or reagent)  
   (unsatd.; aligned carbon nanotube  
   films on porous carriers and a  
   process for producing them)

INDEX TERM: 7439-89-6, Iron, uses 7439-98-7, Molybdenum, uses  
 7440-02-0, Nickel, uses 7440-48-4, Cobalt, uses  
   ROLE: CAT (Catalyst use); USES (Uses)  
   (aligned carbon nanotube films  
   on porous carriers and a process for  
   producing them)

INDEX TERM: 64-17-5, Ethanol, reactions 115-07-1, Propylene,  
   reactions  
   ROLE: RCT (Reactant); RACT (Reactant or reagent)  
   (aligned carbon nanotube films  
   on porous carriers and a process for  
   producing them)

INDEX TERM: 7440-44-0, Carbon, uses  
   ROLE: TEM (Technical or engineered material use); USES  
   (Uses)  
   (nanotubes, film; aligned carbon  
   nanotube films on porous  
   carriers and a process for producing them)

INDEX TERM: 1344-28-1, Alumina, uses 7631-86-9, Silica, uses  
 159995-97-8, Aluminum silicon oxide  
   ROLE: TEM (Technical or engineered material use); USES  
   (Uses)  
   (porous carrier; aligned carbon  
   nanotube films on porous  
   carriers and a process for producing them)

L36 ANSWER 4 OF 20 HCPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2003:872491 HCPLUS Full-text  
 DOCUMENT NUMBER: 139:352690  
 ENTRY DATE: Entered STN: 07 Nov 2003  
 TITLE: Fuel cell electrode using porous  
   carbon film, and its use in  
   membrane-electrode assembly and fuel cell  
 INVENTOR(S): Oya, Nobuo; Takagi, Jun  
 PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
   CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 INT. PATENT CLASSIF.:  
   MAIN: H01M004-96  
   SECONDARY: B01J023-42; H01M008-10

CLASSIFICATION: 52-2 (Electrochemical, Radiational, and Thermal  
Energy Technology)

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003317728	A	20031107	JP 2002-127076	
				200204
				26
<--				
PRIORITY APPLN. INFO.:	JP 2002-127076			
				200204
				26
<--				

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003317728	ICM	H01M004-96
	ICS	B01J023-42; H01M008-10
	IPCI	H01M0004-96 [ICM,7]; B01J0023-42 [ICS,7]; H01M0008-10 [ICS,7]
	IPCR	B01J0023-42 [I,C*]; B01J0023-42 [I,A]; H01M0004-96 [I,C*]; H01M0004-96 [I,A]; H01M0008-10 [I,C*]; H01M0008-10 [I,A]

ABSTRACT:

The electrode is made of the film having continuous pores in which noble metal particles are supported and C particles are filled. Preferably, functional groups are applied on the film surface for hydrophilicity. In the title assembly, the electrode is bonded to both sides of a polymer electrolyte membrane. Desired amount of the noble metal particles are dispersed in the electrode for effective utilization, and the resulting fuel cell shows stable operation.

SUPPL. TERM: fuel cell electrode porous carbon  
film; noble metal particle  
porous carbon film  
electrode; carbon particle  
porous carbon film  
electrode; membrane electrode assembly fuel cell

INDEX TERM: Polyimides, preparation  
ROLE: IMF (Industrial manufacture); RCT (Reactant);  
PREP (Preparation); RACT (Reactant or reagent)  
(C film precursor; fuel cell electrode using  
porous C film filled  
with noble metal particles and C  
particles)

INDEX TERM: Carboxyl group  
Hydroxyl group  
(C film surface component; fuel cell electrode  
using porous C film  
filled with noble metal particles and C  
particles)

INDEX TERM: Fuel cell electrodes  
(fuel cell electrode using porous  
C film filled with noble metal  
particles and C particles)

INDEX TERM: Noble metals

INDEX TERM: 29319-22-0P, 3,3',4,4'-Biphenyltetracarboxylic dianhydride-p-phenylenediamine copolymer  
 USES (Uses)  
 (fuel cell electrode using porous C film filled with noble metal particles and C particles)

SRU  
 ROLE: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (C film precursor; fuel cell electrode using porous C film filled with noble metal particles and C particles)

INDEX TERM: 7440-06-4, Platinum, uses  
 ROLE: CAT (Catalyst use); DEV (Device component use);  
 USES (Uses)  
 (fuel cell electrode using porous C film filled with noble metal particles and C particles)

INDEX TERM: 7440-44-0P, Carbon, uses  
 ROLE: CAT (Catalyst use); DEV (Device component use);  
 IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (fuel cell electrode using porous C film filled with noble metal particles and C particles)

INDEX TERM: 264217-10-9, Nafion 1135  
 ROLE: DEV (Device component use); USES (Uses)  
 (membrane, membrane-electrode assembly formed with; fuel cell electrode using porous C film filled with noble metal particles and C particles)

L36 ANSWER 5 OF 20 COMPENDEX COPYRIGHT 2008 EEI on STN  
 ACCESSION NUMBER: 2003(8):4874 COMPENDEX Full-text  
 TITLE: NiO-SiO<sub>2</sub> sol-gel nanocomposite films for optical gas sensor.  
 AUTHOR: Martucci, A. (Dipto. Ingegneria Mecc. - Settore M. Universita di Padova, 35131 Padova, Italy); Bassiri, N.; Guglielmi, M.; Armelao, L.; Gross, S.; Pivin, J.C.  
 SOURCE: Journal of Sol-Gel Science and Technology v 26 n 1-3 January/March 2003 2003.p 993-996  
 SOURCE: Journal of Sol-Gel Science and Technology v 26 n 1-3 January/March 2003 2003.p 993-996  
 CODEN: JSGTEC ISSN: 0928-0707  
 PUBLICATION YEAR: 2003  
 DOCUMENT TYPE: Journal  
 TREATMENT CODE: Experimental  
 LANGUAGE: English  
 ABSTRACT: Recently nanocomposites with sensing function are becoming a new area of interest in the field of optical gas sensor. In fact, the optical transmittance of nano-particles or thin films has been reported to be changed by atmosphere gases. In particular it was found that NiO, Co<sub>3</sub>O<sub>4</sub> and Mn<sub>3</sub>O<sub>4</sub> thin films showed reversible decrease in the Vis-NIR absorption due to CO. Aim of this work is the synthesis and the characterization of SiO<sub>2</sub> sol-gel glass films doped with NiO nanocrystals. Films of composition (100-X)SiO<sub>2</sub>-XNiO with X = 10, 20, 40, were

obtained by mixing a matrix solution of Si(OC<sub>2</sub>H<sub>5</sub>)<sub>4</sub> (TEOS) and CH<sub>3</sub>Si(OC<sub>2</sub>H<sub>5</sub>)<sub>3</sub> (MTES) as SiO<sub>2</sub> precursors, with a doping solution containing NiCl<sub>2</sub> as precursor for NiO particles. 3-Aminopropyltriethoxysilane (3-APTES), bearing either an ammine group capable of coordinating the Ni ions and hydrolysable siloxane groups for anchoring the metal complex moiety to the silicate matrix, was used as bifunctional ligand. Transmission electron microscopy micrographs showed a uniform distribution of round shaped nanoparticles in film heated at 500deg C with a mean diameter of 2.5 nm. The film composition evaluated from Rutherford backscattering spectrometry was in good agreement with the nominal one. As expected the density of the films heated at 1000deg C is much higher than the density of the film heated at 500deg C due to a residual porosity. Fourier transform infrared spectra also confirmed the presence of residual porosity in the films heated at 500deg C. 13 Refs. CLASSIFICATION CODE: 933.1 Crystalline Solids; 804 Chemical Products

Generally; 801 Chemistry; 802.3 Chemical Operations; 741.3 Optical Devices and Systems  
**CONTROLLED TERM:**  
 \*Nanostructured materials; Fourier transform infrared spectroscopy; Mixing; Doping (additives); Composition; Transmission electron microscopy; Rutherford backscattering spectroscopy; Sol-gels; Thin films; Chemical sensors

**SUPPLEMENTARY TERM:** Optical gas sensors  
**ELEMENT TERM:** Ni\*O; NiO; Ni cp; cp; O cp; Co\*O; Co<sub>3</sub>O; Co cp; Mn\*O; Mn<sub>3</sub>O; Mn cp; C\*O; CO; C cp; O\*Si; SiO; Si cp; O; C\*H\*O\*Si; Si(OC<sub>2</sub>H; H cp; C\*O\*Si; Si(OC; Cl\*Ni; NiCl; Cl cp; Ni; Ni\*O\*Si; Ni sy 3; sy 3; O sy 3; Si sy 3; NiO-SiO

L36 ANSWER 6 OF 20 HCPLUS COPYRIGHT 2008 ACS on STN  
**ACCESSION NUMBER:** 2003:660632 HCPLUS Full-text  
**DOCUMENT NUMBER:** 139:357206  
**ENTRY DATE:** Entered STN: 25 Aug 2003  
**TITLE:** NdFeB thick films prepared by tape casting  
**AUTHOR(S):** Pawlowski, B.; Schwarzer, S.; Rahmig, A.; Topfer, J.  
**CORPORATE SOURCE:** Hermsdorfer Institut fur Technische Keramik e.V., Hermsdorf, 07629, Germany  
**SOURCE:** Journal of Magnetism and Magnetic Materials (2003), 265(3), 337-344  
**PUBLISHER:** Elsevier Science B.V.  
**DOCUMENT TYPE:** Journal  
**LANGUAGE:** English  
**CLASSIFICATION:** 77-8 (Magnetic Phenomena)  
 Section cross-reference(s): 38  
**ABSTRACT:**  
 NdFeB films of thickness between 100 and 800 μm were prepared by tape casting of a slurry containing 84-95 wt% of com. NdFeB powder (MQP-B, -Q and -S). After curing the flexible green tapes at 120.degree.C non-porous magnetic films are obtained. The remanence of the films is in the range of 350-450 mT and the coercivity is between 300 and 800 kA/m depending on the type of MQP powder used. The magnetic properties of the films are discussed in relation to film composition and type of magnetic material. For MEMS applications the thick films are magnetized with a multi-pole stripe pattern with 1 mm pole pitch. The induction at the surface of the films was measured with a Hall probe and compared to theor. calcns. The results indicate that the films are completely magnetized regardless of the film thickness. Tape-casted NdFeB thick films are promising candidates for applications in micro-systems or actuators. Miniaturization of the magnet components

is one of the key issues in the development of electromagnetic micro-systems, thus creating a need for replacement of small sintered magnets by magnetic thick film components. Other applications include encoders.

SUPPL. TERM: neodymium iron boron magnetic film remanence  
 coercivity

INDEX TERM: Casting of metals  
 Coercive force (magnetic)  
 Demagnetization  
 Density  
 Heat treatment  
 Magnetic field effects  
 Magnetic films  
 Magnetic induction  
 Microstructure  
 Particle size distribution  
 Porosity  
 Remanence  
 (NdFeB thick films prepared by tape casting)

INDEX TERM: Polymers, processes  
 ROLE: PEP (Physical, engineering or chemical process);  
 PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (bonding agents; NdFeB thick films prepared by tape casting)

INDEX TERM: 94282-59-4  
 ROLE: PEP (Physical, engineering or chemical process);  
 PRP (Properties); PYP (Physical process); TEM  
 (Technical or engineered material use); PROC  
 (Process); USES (Uses)  
 (NdFeB thick films prepared by tape casting)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Chin, T; J Magn Magn Mater 2000, V209, P75 HCPLUS  
 (2) Christoph, V; Program Package "MAGFIELD" 1999  
 (3) Cugat, O; Proceedings of the 17th International Workshop Rare Earth Magnets and their Application 2002, P478 HCPLUS  
 (4) Gollhardt, E; F&M 1998, V106, P503  
 (5) Kallenbach, E; Mechantronics 1999, V9, P769  
 (6) Keavney, D; J Appl Phys 1997, V81, P4441 HCPLUS  
 (7) Kube, H; Proceedings of the 14th ASPE Annual Meeting 1999, P579  
 (8) Lemke, H; Nanostructured Mater 1997, V9, P371 HCPLUS  
 (9) Ma, B; J Magn Magn Mater 2002, V239, P418 HCPLUS  
 (10) Magnequench; Product catalogue  
 (11) Makita, K; Jpn J Powder Metall 1998, V22, P365 HCPLUS  
 (12) Rieger, G; J Appl Phys 2000, V87(9), P5329 HCPLUS  
 (13) Topfer, J; In preparation  
 (14) Topfer, J; Proceedings of the 5th Symposium "Magneto resistive Sensors: Basics, Preparation and Applications" 1999  
 (15) Wyslocki, J; J Mater Sci 1992, V27, P3777 HCPLUS  
 (16) Yamashita, S; IEEE, Trans Magn 1992, V7, P45

ACCESSION NUMBER: 2002:632092 HCAPLUS Full-text  
 DOCUMENT NUMBER: 138:65509  
 ENTRY DATE: Entered STN: 22 Aug 2002  
 TITLE: Pulsed microplasma cluster source technique for synthesis of nanostructured carbon films  
 AUTHOR(S): Milani, P.; Piseri, P.; Barborini, E.; Kholmanov, I. N.  
 CORPORATE SOURCE: INFM-Dipartimento di Fisica, Universita di Milano, Milan, I-20133, Italy  
 SOURCE: NATO Science Series, II: Mathematics, Physics and Chemistry (2002), 61(New Trends in Intercalation Compounds for Energy Storage), 561-564  
 CODEN: NSSICD  
 PUBLISHER: Kluwer Academic Publishers  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CLASSIFICATION: 78-1 (Inorganic Chemicals and Reactions)  
 ABSTRACT:  
 Nanostructured carbon thin films have been synthesized using the supersonic cluster beam deposition technique. Carbon clusters are produced in pulsed microplasma cluster source by using elec. discharge vaporization of the cathode. By controlling the key parameters of the vaporization process and some parts of the exptl. arrangement, cluster beam properties such as mass distribution of the cluster beam and kinetic energy of the particles can be improved. The method is also characterized by the high deposition rate of supersonic expanded cluster beam in comparison with other related techniques.  
 Low-d. nanostructured carbon porous thin \*\*\*films\*\*\* synthesized by the method may find use in nanotechnol. applications.  
 SUPPL. TERM: pulsed microplasma cluster synthesis nanostructured carbon film  
 INDEX TERM: Clusters  
 Nanocrystalline materials  
 Plasma  
 (pulsed microplasma cluster source technique for synthesis of nanostructured carbon films)  
 INDEX TERM: 7440-44-0, Carbon, processes  
 ROLE: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)  
 (pulsed microplasma cluster source technique for synthesis of nanostructured carbon films)  
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD.  
 REFERENCE(S):  
 (1) Amaratunga, G; Nature (London) 1996, V383, P312  
 (2) Milani, P; Cluster Beam Synthesis of Nanostructured Materials 1999  
 (3) Muller, D; Atomic and Molecular Beam Methods 1988, V1  
 (4) Reis, V; Chem Phys 1963, V39, P3240 HCAPLUS

L36 ANSWER 8 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 1  
 ACCESSION NUMBER: 2000:419904 HCAPLUS Full-text  
 DOCUMENT NUMBER: 133:47900  
 ENTRY DATE: Entered STN: 23 Jun 2000  
 TITLE: The quantitative morphology of roadside and background urban aerosol in Plymouth, UK  
 AUTHOR(S): Dye, A. L.; Rhead, M. M.; Trier, C. J.

CORPORATE SOURCE: Department of Environmental Sciences, University of Plymouth, Plymouth, PL4 8AA, UK  
 SOURCE: Atmospheric Environment (2000), 34(19), 3139-3148  
 CODEN: AENVEQ; ISSN: 1352-2310  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CLASSIFICATION: 59-2 (Air Pollution and Industrial Hygiene)  
 Section cross-reference(s): 51

**ABSTRACT:**

Anal. of the fine urban aerosol ( $<1 \mu\text{m}$ ) was made using direct sampling of urban aerosol onto porous carbon films (PCF). The efficiency of collection was low, but the samples were representative and enabled transmission electron microscopy (TEM) for sub-micron particle anal. Measurement was made of the fractal dimensions and diameter of particles. PCF were used in the simultaneous collection of urban roadside and background aerosol, on four dates between Mar. and August, 1997, in Plymouth, England. The aerosol was classified into agglomerate and nonagglomerate groups. At the roadside, agglomerate particles accounted for 94% of the \*\*\*particles\*\*\* analyzed; this fell to 89% of the particles in the background samples. The anal. of agglomerate particles by energy dispersive x-ray spectroscopy confirmed their carbonaceous nature. A variety of agglomerate particles were found having coatings and mixed morphols. The morphol. of \*\*\*particles\*\*\* was analyzed using two fractal anal. techniques to derive a d. fractal dimension and a perimeter fractal dimension. These measures quant. describe the space-filling quality and the roughness of the boundary of the two-dimensional projection of the particle. The average perimeter fractal dimension (PFD) of aerosol was consistently significantly greater at the roadside than the background (+0.02), in anal. both including and excluding the nonfractal particles. There is evidence of a change in the average morphol. of aerosol between roadside and background aerosol, which is still the case when nonfractal \*\*\*particles\*\*\* are removed. This morphol. change may be due to the inclusion of particles from other nonagglomerate sources, which have a low fractal dimension, or it may be indicative of a smoother, aged roadside aerosol at the background site. The consistency of the difference between the roadside and the background aerosol morphol. suggests that there is some morphol. change that occurs in \*\*\*particles\*\*\* between the roadside and the background site.

SUPPL. TERM: urban aerosol roadside background quant morphol  
 Plymouth England  
 INDEX TERM: Air pollution  
 (particulate; quant. morphol. of roadside and background urban aerosol in Plymouth, England)  
 INDEX TERM: Airborne particles  
 Atmospheric aerosols  
 (quant. morphol. of roadside and background urban aerosol in Plymouth, England)  
 INDEX TERM: Carbonaceous materials (technological products)  
 ROLE: POL (Pollutant); OCCU (Occurrence)  
 (quant. morphol. of roadside and background urban aerosol in Plymouth, England)  
 INDEX TERM: Fractals  
 (quant. morphol. of roadside and background urban aerosol in Plymouth, England, in relation to)  
 REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS

## RECORD.

- REFERENCE(S):
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L36 ANSWER 9 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1997:761876 HCAPLUS Full-text  
 DOCUMENT NUMBER: 128:51684

ENTRY DATE: Entered STN: 06 Dec 1997  
 TITLE: Manufacture of ultrafine particles by  
           irradiation of a porous or textured target on  
           substrates using high-energy beam for  
           vaporization  
 INVENTOR(S): Tanaka, Shun-ichiro; Xu, Bingshe  
 PATENT ASSIGNEE(S): Research Development Corporation of Japan,  
                   Japan; Tokyo Shibaura Electric Co.  
 SOURCE: Eur. Pat. Appl., 26 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
     MAIN: B22F009-02  
     SECONDARY: B22F001-00; C01B031-02; B01J019-12  
 CLASSIFICATION: 56-4 (Nonferrous Metals and Alloys)  
 Section cross-reference(s): 48, 57, 76  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 808682	A2	19971126	EP 1997-303487	199705 22
<--				
EP 808682	A3	20000301		
EP 808682	B1	20030716		
R: DE, FR, GB				
JP 09312261	A	19971202	JP 1996-126642	199605 22
<--				
JP 3373357	B2	20030204		
JP 09309713	A	19971202	JP 1996-126643	199605 22
<--				
JP 3445059	B2	20030908		
JP 09309798	A	19971202	JP 1996-126644	199605 22
<--				
JP 3426083	B2	20030714		
PRIORITY APPLN. INFO.:			JP 1996-126642	A 199605 22
<--				
JP 1996-126643				
A 199605 22				
<--				
JP 1996-126644				
A 199605 22				
<--				

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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EP 808682	ICM	B22F009-02
	ICS	B22F001-00; C01B031-02; B01J019-12
	IPCI	B22F0009-02 [ICM,6]; B22F0001-00 [ICS,6]; C01B0031-02 [ICS,6]; C01B0031-00 [ICS,6,C*]; B01J0019-12 [ICS,6]
	IPCR	B01J0019-08 [I,C*]; B01J0019-08 [I,A]; B01J0019-12 [I,C*]; B01J0019-12 [I,A]; B22F0001-00 [I,C*]; B22F0001-00 [I,A]; B22F0009-02 [I,C*]; B22F0009-02 [I,A]; B22F0009-06 [I,C*]; B22F0009-06 [I,A]; C01B0031-00 [I,C*]; C01B0031-02 [I,A]
	ECLA	B01J019/08B; B01J019/12B; B01J019/12D; B22F001/00A2B4; B22F009/02; B22F009/06; C01B031/02B
JP 09312261	IPCI	H01L0021-203 [ICM,6]; H01L0021-02 [ICM,6,C*]; B01J0019-12 [ICS,6]; H01L0039-24 [ICS,6]; B22F0009-02 [ICS,6]
	IPCR	B01J0019-12 [I,C*]; B01J0019-12 [I,A]; B22F0009-02 [I,C*]; B22F0009-02 [I,A]; C23C0014-46 [I,C*]; C23C0014-46 [I,A]; H01L0021-02 [I,C*]; H01L0021-203 [I,A]; H01L0039-24 [I,C*]; H01L0039-24 [I,A]
JP 09309713	IPCI	C01B0031-02 [ICM,6]; C01B0031-00 [ICM,6,C*]; B01J0019-12 [ICS,6]
	IPCR	C01B0031-00 [I,C*]; C01B0031-02 [I,A]; B01J0019-12 [I,C*]; B01J0019-12 [I,A]
JP 09309798	IPCI	C30B0030-00 [ICM,6]; B01J0019-00 [ICS,6]; B01J0019-12 [ICS,6]; B22F0001-00 [ICS,6]
	IPCR	B01J0019-00 [I,C*]; B01J0019-00 [I,A]; B01J0019-12 [I,C*]; B01J0019-12 [I,A]; B22F0001-00 [I,C*]; B22F0001-00 [I,A]; C30B0030-00 [I,C*]; C30B0030-00 [I,A]

**ABSTRACT:**

The target material having distributed pores is placed on a flat substrate, and is irradiated in vacuum with high-energy beam at an angle to the substrate to promote the target vaporization in pores followed by formation of ultrafine particles of nominally 1-10 nm size. The process is suitable for manufacture of ultrafine \*\*\*particles\*\*\* of metal or semiconductor materials, as well as the manufacture of fullerene particles from C films. The \*\*\*particle\*\*\* size and uniformity can be controlled by the pore texture and the irradiation conditions. The dispersed Au \*\*\*particles\*\*\* with average diameter of 2.4 nm were formed on supporting C film by placing Au-mesh target, followed by irradiation with inclined Ar-ion beam at 3.0 keV, 0.5 mA, and the vacuum of 10<sup>-3</sup> Pa to promote formation of the typical Au particle in an original mesh pore.

**SUPPL. TERM:** porous target irradn ultrafine powder pptn; metal powder pptn target beam irradn; gold powder pptn target beam irradn; semiconductor powder pptn target beam irradn; fullerene powder pptn target beam irradn; ion beam irradn target vapor pptn; carbon support metal vaporizing ultrafine powder

**INDEX TERM:** Composites  
(bonded powders; manufacture of ultrafine particles by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

**INDEX TERM:** Vapor deposition process  
(irradiation and; manufacture of ultrafine particles)

INDEX TERM: by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

Particle beams  
(irradiation by high-power, for vapor precipitation;

manufacture of ultrafine particles by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: Electron beams  
(irradiation by; manufacture of ultrafine particles by irradiation of porous target heated on substrate by inclined electron beam for vapor precipitation)

INDEX TERM: Fullerenes  
ROLE: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of; manufacture of ultrafine fullerenes by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: Semiconductor materials  
(powders from; manufacture of ultrafine particles by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: Powders  
(ultrafine, manufacture of precipitated; manufacture of particles by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: 7440-44-0, Carbon, processes  
ROLE: PEP (Physical, engineering or chemical process);  
PROC (Process)  
(amorphous films; manufacture of ultrafine particles by irradiation of porous target heated on carbon film by high-energy ion beam for local vapor precipitation)

INDEX TERM: 7440-37-1, Argon, processes  
ROLE: PEP (Physical, engineering or chemical process);  
PROC (Process)  
(ion beam, irradiation with; manufacture of ultrafine particles by irradiation of porous target heated on substrate by high-energy ion beam for local vapor precipitation)

INDEX TERM: 7440-06-4, Platinum, uses 7440-21-3,  
Silicon, uses 7440-50-8, Copper, uses 7440-57-5,  
Gold, uses  
ROLE: TEM (Technical or engineered material use); USES (Uses)  
(powder, manufacture of ultrafine; manufacture of ultrafine particles by irradiation of porous target heated on carbon film by high-energy ion beam for local vapor precipitation)

L36 ANSWER 10 OF 20 HCPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 1996:214293 HCPLUS Full-text

DOCUMENT NUMBER: 124:305709

ENTRY DATE: Entered STN: 13 Apr 1996

TITLE: Metal-dispersed porous carbon films as electrocatalytic sensors

AUTHOR(S): Wang, Joseph; Pamidi, Prasad V. A.; Renschler,

CORPORATE SOURCE: Clifford L.; White, Christine  
 Department of Chemistry and Biochemistry, New Mexico State University, Las Cruces, NM, USA  
 SOURCE: Journal of Electroanalytical Chemistry (1996), 404(1), 137-42  
 CODEN: JECHE8  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CLASSIFICATION: 79-2 (Inorganic Analytical Chemistry)  
 Section cross-reference(s): 9, 64, 67, 72, 80

**ABSTRACT:**  
 The attractive features of ultrathin porous carbon \*\*\*films\*\*\* were coupled with the efficient catalytic action of \*\*\*dispersed\*\*\* metal particles. In particular, loading of these submicrometer foams with ruthenium or platinum centers offers a dramatic increase in the electron transfer rates of important redox systems, such as NADH, uric acid, ascorbic acid, acetaminophen, hydrazine or hydrogen peroxide. Characterization of the electrocatalytic behavior (with respect to the pH, scan rate or metal loading) and the attractive low-potential anal. (sensing) performance are reported. SEM sheds useful insights into the distribution of the metals within the porous electrode matrix.

SUPPL. TERM: metal dispersed porous  
 carbon film electrocatalyst; sensor  
 metal porous carbon film  
 electrocatalyst  
 INDEX TERM: Sensors  
 (electrocatalytic; metal-dispersed  
 porous carbon films as  
 electrocatalytic sensors)  
 INDEX TERM: Films  
 (metal-dispersed porous  
 carbon films as electrocatalytic  
 sensors)  
 INDEX TERM: Catalysts and Catalysis  
 (electrochem., metal-dispersed  
 porous carbon films as  
 electrocatalytic sensors)  
 INDEX TERM: 7440-06-4, Platinum, analysis 7440-18-8,  
 Ruthenium, analysis  
 ROLE: ARU (Analytical role, unclassified); CAT  
 (Catalyst use); DEV (Device component use); ANST  
 (Analytical study); USES (Uses)  
 (metal-dispersed porous  
 carbon films as electrocatalytic  
 sensors)  
 INDEX TERM: 7440-44-0, Carbon, analysis  
 ROLE: ARU (Analytical role, unclassified); DEV (Device  
 component use); ANST (Analytical study); USES (Uses)  
 (metal-dispersed porous  
 carbon films as electrocatalytic  
 sensors)  
 INDEX TERM: 50-81-7, Ascorbic acid, analysis 58-68-4, NADH  
 69-93-2, Uric acid, analysis 103-90-2, Acetaminophen  
 302-01-2, Hydrazine, analysis 7722-84-1, Hydrogen  
 peroxide, analysis  
 ROLE: ANT (Analyte); ANST (Analytical study)  
 (redox compound determination by electrocatalytic sensors)

with metal-dispersed porous  
carbon films)

L36 ANSWER 11 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1992:155139 HCAPLUS Full-text  
 DOCUMENT NUMBER: 116:155139  
 ENTRY DATE: Entered STN: 17 Apr 1992  
 TITLE: Imaging of lubricating oil insolubles by  
 electron microscopy  
 AUTHOR(S): Shuff, P. J.; Clarke, L. J.  
 CORPORATE SOURCE: Thornton Res. Cent., Shell Res. Ltd., Chester,  
 CH1 3SH, UK  
 SOURCE: Tribology International (1991), 24(6),  
 381-7  
 DOCUMENT TYPE: CODEN: TRBIBK; ISSN: 0301-679X  
 LANGUAGE: Journal  
 English  
 CLASSIFICATION: 51-8 (Fossil Fuels, Derivatives, and Related  
 Products)  
 Section cross-reference(s): 73

ABSTRACT:  
 A range of techniques which permits the imaging, spatial  
 \*\*\*distribution\*\*\* and, in some cases, the particle size  
 \*\*\*distribution\*\*\* of lubricating oil insol. by electron microscopy is  
 described and illustrated. Techniques and results discussed are: (1) oil  
 removal/carbon film, holey carbon  
 \*\*\*film\*\*\* filtering, freeze fracture replication), (2) capillary  
 de-oiling/critical point drying, (3) particle siting of used oil  
 insol., and (4) oil retention (cryoTEM, cryoultramicrotomy).

SUPPL. TERM: SEM TEM lubricating oil insol; imaging electron  
 microscopy lubricating oil insol  
 INDEX TERM: Paraffin waxes and Hydrocarbon waxes, miscellaneous  
 ROLE: MSC (Miscellaneous)  
 (electron microscopy of, imaging of lubricating oil  
 insol. in relation to)  
 INDEX TERM: Lubricating greases  
 (imaging of, by electron microscopy)  
 INDEX TERM: Soot  
 (in used lubricating oil, imaging of, by electron  
 microscopy)  
 INDEX TERM: Lubricating oils  
 (insol. of, imaging of, by electron microscopy)  
 INDEX TERM: Microscopy, electron  
 (of lubricating oil insol.)  
 INDEX TERM: Lubricating oil additives  
 (detergents, imaging of, by electron microscopy)  
 INDEX TERM: Microscopy, electron  
 (scanning, of lubricating oil insol.)  
 INDEX TERM: Lubricating grease additives  
 (soaps, imaging of, by electron microscopy)  
 INDEX TERM: Microscopy, electron  
 (transmission, of lubricating oil insol.)

L36 ANSWER 12 OF 20 COMPENDEX COPYRIGHT 2008 EEI on STN  
 ACCESSION NUMBER: 1992(9):120005 COMPENDEX Full-text  
 DOCUMENT NUMBER: 9209115835  
 TITLE: Structural study of colloidal oxides by high  
 resolution electron microscopy.  
 AUTHOR: Kirkland, A.I. (Univ of Cambridge, Engl);

MEETING TITLE: Jefferson, D.A.; Tang, D.  
 Proceedings of the Institute of Physics Electron Microscopy and Analysis Group Conference.  
 MEETING ORGANIZER: The Royal Microscopical Soc  
 MEETING LOCATION: Bristol, Engl  
 MEETING DATE: 10 Sep 1991-13 Sep 1991  
 SOURCE: Institute of Physics Conference Series v  
 119.Publ by IOP Publishing Ltd, Distribution Department, Bristol, Engl.p 39-42  
 SOURCE: Institute of Physics Conference Series v  
 119.Publ by IOP Publishing Ltd, Distribution Department, Bristol, Engl.p 39-42  
 CODEN: IPCSEP ISSN: 0951-3248  
 ISBN: 0-85498-408-9  
 PUBLICATION YEAR: 1991  
 MEETING NUMBER: 16592  
 DOCUMENT TYPE: Conference Article  
 TREATMENT CODE: Experimental  
 LANGUAGE: English  
 ABSTRACT: The morphology and surface structure exhibited in colloidal titanium and cerium oxide particles has been examined by High Resolution Electron Microscopy. Samples of concentrated sols of cerium and titanium oxide were prepared for electron microscopy by extensive dilution with doubly distilled water followed by ultrasonic dispersion and deposition onto holey carbon films. Refs.  
 CLASSIFICATION CODE: 741 Optics & Optical Devices; 804 Chemical Products; 542 Light Metals & Alloys; 931 Applied Physics; 549 Nonferrous Metals & Alloys  
 CONTROLLED TERM: \*MICROSCOPES, ELECTRON: Applications; TITANIUM COMPOUNDS; OXIDES; CERIUM COMPOUNDS; COLLOIDS; SURFACES:Microstructure  
 SUPPLEMENTARY TERM: HIGH RESOLUTION ELECTRON MICROSCOPY; SURFACE MORPHOLOGY

L36 ANSWER 13 OF 20 JAPIO (C) 2008 JPO on STN  
 ACCESSION NUMBER: 1990-034703 JAPIO Full-text  
 TITLE: MANUFACTURE OF AROMATIZED POROUS METAL SINTERED BODY  
 INVENTOR: NISHIMURA MINORU; KAMITAKI NAOHISA  
 PATENT ASSIGNEE(S): NISHIMURA MINORU  
 KAMITAKI NAOHISA  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 02034703	A	19900205	Heisei	B22F003-26

## APPLICATION INFORMATION

STN FORMAT: JP 1988-183004 19880722  
 ORIGINAL: JP63183004 Showa  
 PRIORITY APPLN. INFO.: JP 1988-183004 19880722  
 SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1990  
 INT. PATENT CLASSIF.:  
 MAIN: B22F003-26  
 SECONDARY: B22F003-24  
 ABSTRACT:

PURPOSE: To manufacture an aromatized porous metal sintered body having excellent outward appearance and aromatizing durability by executing steam treatment or anodic oxidizing treatment to a porous sintered body of metal powder particles and impregnating aromatized liquid in this after forming

surface film. CONSTITUTION: The powder particles containing metal or alloy powder as main component is sintered after compressing and forming to obtain the porous sintered body. The steam treatment or anodic oxidizing treatment is executed to this sintered body to form the surface film. The above steam treatment is desirable to bring superheated steam into contact with the sintered body and treat for 0.5-lhr. Further, the anodic oxidizing treatment is desirable to execute by using the sintered body as the anode and graphite as the cathode in the water solution of <10kmol/m<sup>3</sup>> NaOH at 70-90°C. By this surface film, voids among the particles in the sintered body are made small at least near the surface. After that, the aromatized liquid is impregnated in the above porous sintered body. By this method, dispersion of the impregnated aromatized-liquid is restrained to the min. and held to long time and also the outward appearance caused by the above surface film is improved. COPYRIGHT: (C)1990,JPO&Japio

L36 ANSWER 14 OF 20 JAPIO (C) 2008 JPO on STN  
 ACCESSION NUMBER: 1987-098259 JAPIO Full-text  
 TITLE: KIT FOR MEASURING IMMUNE ACTIVITY MATERIAL  
 INVENTOR: KAWASAKI TAKASHI  
 PATENT ASSIGNEE(S): NITTO ELECTRIC IND CO LTD  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 62098259	A	19870507	Showa	G01N033-543

## APPLICATION INFORMATION

STN FORMAT: JP 1985-239690 19851025  
 ORIGINAL: JP60239690 Showa  
 PRIORITY APPLN. INFO.: JP 1985-239690 19851025  
 SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1987

## INT. PATENT CLASSIF.:

MAIN: G01N033-543  
 SECONDARY: C12Q001-00

## ABSTRACT:

PURPOSE: To measure an immune active material with good accuracy by using a kit consisting of a dispersion of high-molecular polymer particles deposited with an antigen or antibody specific to a material to be measured, porous film, enzyme labeled antigen or antibody specific to the material to be measured, substrate of enzyme and buffer solution

CONSTITUTION: This kit for measuring the immune active material is constituted of A): the dispersion of the high-molecular polymer particles deposited with the antigen or antibody specific to the material to be measured, B): a filter having the porous film, C): the enzyme labeled antigen or antibody specific to the material to be measured or the enzyme labeled material to be measured, D): the substrate of reaction (coloring reaction) while the enzyme of C) can catalyze, and E): the buffer solution to be used for cleaning in the stage of separation by the porous film. The material to be measured is measured by observing the coloration by enzyme reaction if such kit is used; therefore, the measurement is easily made with good accuracy. COPYRIGHT:

(C)1987,JPO&Japio

L36 ANSWER 15 OF 20 INSPEC (C) 2008 IET on STN  
 ACCESSION NUMBER: 1987:2916683 INSPEC Full-text  
 DOCUMENT NUMBER: A1987-086155  
 TITLE: Intermetallic phases formed during DC-casting of an Al-0.25 wt pct Fe-0.13 wt pct Si alloy

AUTHOR: Skjerpe, P. (Dept of Phys., Oslo Univ., Norway)  
 SOURCE: Metallurgical Transactions A (Physical  
           Metallurgy and Materials Science) (Feb. 1987),  
           vol.18A, no.2, p. 189-200, 35 refs.  
           CODEN: MTTABN, ISSN: 0360-2133  
           Price: 0360-2133/87/\$00.75

DOCUMENT TYPE: Journal  
 TREATMENT CODE: Experimental  
 COUNTRY: United States  
 LANGUAGE: English

ABSTRACT: The Al-Fe and Al-Fe-Si particles formed during DC-casting of an Al-0.25 wt pct Fe-0.13 wt pct Si alloy have been examined. The particles were analyzed by transmission electron microscopy (TEM) and energy dispersive spectroscopy of X-rays (EDS). Crystal faults were studied by high resolution electron microscopy (HREM). Samples for electron microscopy were taken at various positions in the ingot, i.e. with different local cooling rates during solidification. At a cooling rate of 6 to 8 K/s the dominating phases were BCC  $\alpha$ -AlFeSi and BCT AlmFe. The space group of BCC  $\alpha$ -AlFeSi was verified to be Im3. Superstructure reflections from AlmFe were caused by faults on {110}-planes. At a cooling rate of 1 K/s the dominating phases were monoclinic Al3Fe and the incommensurate structure AlxFe. In Al3Fe, stacking faults on {001} were frequently observed. The structure of AlxFe is probably related to Al6Fe. Some amounts of other phases were detected. For EDS-analysis, extracted particles mounted on holey carbon films were examined

CLASSIFICATION CODE: A6155H Crystal structure of specific alloys;  
                        A6170P Stacking faults, stacking fault  
                        tetrahedra and other planar or extended defects;  
                        A6470 Phase equilibria, phase transitions, and  
                        critical points; A6470D Solid-liquid  
                        transitions; A8130B Phase diagrams of metals and  
                        alloys; A8130F Solidification

CONTROLLED TERM: aluminium alloys; casting; crystal atomic  
                        structure of alloys; iron alloys; phase  
                        diagrams; phase equilibrium; silicon alloys;  
                        solidification; stacking faults; transmission  
                        electron microscope examination of materials;  
                        X-ray chemical analysis

SUPPLEMENTARY TERM: direct chill casting; superstructure  
                        reflections; intermetallic phases; transmission  
                        electron microscopy; energy dispersive  
                        spectroscopy of X-rays; high resolution electron  
                        microscopy; local cooling rates; solidification;  
                        space group; dominating phases; monoclinic  
                        Al3Fe; incommensurate structure; stacking  
                        faults; Al-Fe-Si particles

CHEMICAL INDEXING: AlFeSi ss, Al ss, Fe ss, Si ss  
 ELEMENT TERMS: Al\*Fe; Al sy 2; sy 2; Fe sy 2; Al3Fe; Al cp; cp;  
                        Fe cp; Fe\*Si; Si sy 2; Fe-Si; FeSi; Si cp; Al;  
                        Fe; Si; Al-Fe; Al\*Fe\*Si; Al sy 3; sy 3; Fe sy 3;  
                        Si sy 3; Al-Fe-Si; AlFeSi; AlmFe; AlxFe; Al6Fe

L36 ANSWER 16 OF 20 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1986:43396 HCPLUS Full-text  
 DOCUMENT NUMBER: 104:43396  
 ORIGINAL REFERENCE NO.: 104:6927a,6930a  
 ENTRY DATE: Entered STN: 08 Feb 1986  
 TITLE: The mechanism of the deposition of pyrolytic  
           carbons  
 AUTHOR(S): Kaae, J. L.  
 CORPORATE SOURCE: G. A. Technol., Inc., San Diego, CA, 92138, USA  
 SOURCE: Carbon (1985), 23(6), 665-73

CODEN: CRBNNAH; ISSN: 0008-6223

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CLASSIFICATION: 75-2 (Crystallography and Liquid Crystals)  
 ABSTRACT:  
 The changes were studied in crystallite-preferred orientation, \*\*\*distribution\*\*\* of 0.1-1.0- $\mu\text{m}$  diameter pores, d., growth feature shape, and crystallite arrangement that occur with changes in the conditions of pyrolytic C deposition in a fluidized bed of \*\*\*particles.\*\*\* Based on these changes a deposition mechanism is proposed wherein changes in the crystallite-preferred orientation and the pore distribution are controlled by the relative concns. of 2 depositing components, which are solid particles and mol. species. Changes in the crystallite arrangement, and thereby the d., are controlled by changes in the reaction probability of the planar hydrocarbon mols. with the C surface.

SUPPL. TERM: deposition mechanism pyrolytic carbon; microstructure pyrolytic carbon deposition  
 INDEX TERM: Pore (distribution of, in carbon pyrolytic films)  
 INDEX TERM: Crystallites (orientation and size of, in pyrolytic carbon films)  
 INDEX TERM: 7440-44-0, uses and miscellaneous  
 ROLE: USES (Uses) (deposition of pyrolytic, microstructure and pore distribution in)

L36 ANSWER 17 OF 20 HCPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1984:212373 HCPLUS Full-text  
 DOCUMENT NUMBER: 100:212373  
 ORIGINAL REFERENCE NO.: 100:32245a,32248a  
 ENTRY DATE: Entered STN: 23 Jun 1984  
 TITLE: Carbon sorbent for separating low- and high-molecular-weight substances  
 INVENTOR(S): Solodovnik, V. D.; Solodkaya, T. I.; Davydov, A. B.; Malozemova, L. N.; Vysokosov, A. N.  
 PATENT ASSIGNEE(S): All-Union Scientific-Research Institute of Medical Technology, USSR  
 SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1984, (12), 79.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Russian  
 INT. PATENT CLASSIF.: C01B031-16; B01J020-20  
 CLASSIFICATION: 48-1 (Unit Operations and Processes)  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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SU 1082758	A1	19840330	SU 1977-2561311	197712 28 --
PRIORITY APPLN. INFO.:			SU 1977-2561311	197712

&lt;--

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
SU 1082758	IC	C01B031-16; B01J020-20
	IPCI	C01B0031-16; C01B0031-00 [C*]; B01J0020-20
	IPCR	B01J0020-20 [I,C*]; B01J0020-20 [I,A]; C01B0031-00 [I,C*]; C01B0031-16 [I,A]

## ABSTRACT:

A C sorbent for separating low- and high-mol. weight substances is prepared by \*\*\*dispersing\*\*\* it in a solution of film-forming material in the presence of a solvent, removing the C particles with the layer of film-forming material applied to them, removing the remaining solvent from the film-forming material and then drying the product. The degree of separation of low- and high-mol.-weight substances is increased and the absorption kinetics of low-mol.-weight compds. improved by decreasing the degree of filling of the porous structure of the C with the film-forming material, by first impregnating the \*\*\*particles\*\*\* of activated C with a liquid mixed with the solvent, and then removing the excess liquid CHCl<sub>3</sub> may be used as this liquid, poly(vinyl alc.) as the film-forming material, and H<sub>2</sub>O as the solvent for the latter. Acetylcellulose may be used as film-forming material, and COMe<sub>2</sub> as the solvent, also.

SUPPL. TERM: low mol wt substance sepn; high mol wt substance sepn;  
carbon sorbent sepn  
 INDEX TERM: 7440-44-0, uses and miscellaneous  
     ROLE: USES (Uses)  
         (active, adsorbents, coating of)  
 INDEX TERM: 67-64-1, uses and miscellaneous  
     ROLE: USES (Uses)  
         (as solvent, in coating of active carbon)  
 INDEX TERM: 9002-89-5 9004-35-7  
     ROLE: USES (Uses)  
         (coating with, of active carbon)  
 INDEX TERM: 67-66-3, uses and miscellaneous 7732-18-5, uses and  
     miscellaneous  
     ROLE: USES (Uses)  
         (impregnating with, of active carbon before  
             coating)

L36 ANSWER 18 OF 20 COMPENDEX COPYRIGHT 2008 EEI on STN  
 ACCESSION NUMBER: 1986(12):205055 COMPENDEX Full-text  
 TITLE: FILM GROWTH ON ALUMINUM ALLOYS DURING AC  
     ANODIZING IN SULPHURIC AND OXALIC ACID  
     SOLUTIONS.  
 AUTHOR: Zahavi, J. (Technion-Israel Inst of Technology,  
     Haifa, Isr); Kerbel, H.; Korotkina, O.  
 MEETING TITLE: 71st.AES Annual Technical Conference  
     Proceedings.  
 MEETING ORGANIZER: American Electroplaters' Soc Inc, Winter Park,  
     FL, USA  
 MEETING LOCATION: New York, NY, USA  
 MEETING DATE: 16 Jul 1984-19 Jul 1984  
 SOURCE: Annual Technical Conference - American  
     Electroplaters' Society 71st.Publ by American  
     Electroplaters' Soc Inc, Winter Park, FL, USA  
     Pap G-3, 24p  
 SOURCE: Annual Technical Conference - American

Electroplaters' Society 71st.Publ by American  
 Electroplaters' Soc Inc, Winter Park, FL, USA  
 Pap G-3, 24p  
 CODEN: ATCSDW ISSN: 0270-2622

PUBLICATION YEAR: 1984

MEETING NUMBER: 06051

DOCUMENT TYPE: Conference Article

LANGUAGE: English

**ABSTRACT:** Studies are being made of A-C anodizing processes on aluminum commercial alloys in sulfuric and oxalic acids at constant AC voltages. Special attention is given to the effect of intermetallic second phase particles dispersed in these alloys on AC film growth and properties. Porous A-C film thickness increased with anodized time, electrolyte temperature and concentration and anodizing voltage on all the aluminum alloys used in this work. Intermetallic compounds dispersed in the aluminum alloy matrix incorporated into the anodic films during their formation and thus affected film composition and properties. (Edited author abstract) 13 refs. CLASSIFICATION CODE: 541 Aluminum & Alloys; 539 Metals Corrosion &

Protection; 423 General Materials Properties &  
 Testing; 944 Moisture, Pressure & Temperature, &  
 Radiation Measuring Instruments; 804 Chemical  
 Products; 802 Chemical Apparatus & Plants  
**\*ALUMINUM AND ALLOYS:Anodic Oxidation;**  
**PROTECTIVE COATINGS:Thickness Measurement;**  
**FILMS:Preparation; SULFURIC ACID:Chemical**  
 Reactions; ACIDS:Organic

SUPPLEMENTARY TERM: SCANNING ELECTRON MICROSCOPE; TRANSMISSION  
 ELECTRON MICROSCOPE; ELECTRON PROBE  
 MICROANALYZER; ALTERNATING CURRENT ANODIZATION;  
 OXALIC ACID; BARRIER LAYER

L36 ANSWER 19 OF 20 HCPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 1982:481673 HCPLUS Full-text

DOCUMENT NUMBER: 97:81673

ORIGINAL REFERENCE NO.: 97:13441a,13444a

ENTRY DATE: Entered STN: 12 May 1984

TITLE: A.c. anodizing processes of aluminum alloys

AUTHOR(S): Zahavi, Joseph; Kerbel, H.; Korotkina, O.

CORPORATE SOURCE: Israel Inst. Met., Technion, Haifa, Israel

SOURCE: Journal of the Electrochemical Society (

1982), 129(7), 1572-9

CODEN: JESOAN; ISSN: 0013-4651

DOCUMENT TYPE: Journal

LANGUAGE: English

CLASSIFICATION: 72-7 (Electrochemistry)

**ABSTRACT:**

Studies were made of thick a.c. anodic films on com. purity Al and Al-Cu alloys in H<sub>2</sub>SO<sub>4</sub> and oxalic acid solns., with particular examination of the constituents in these alloys. Film structure, topog. and composition were characterized through electron microscopy and electron microprobe anal.

Fe-rich 2nd-phase particles and Cu-rich, Fe, and Mn

\*\*\*dispersed\*\*\* intermetallics present in the AA 1100-H14 [11146-12-6]

and in AA 2024 T 3 [12616-84-1], resp., were incorporated and retained

in the a.c. films during their growth. The embedment of these 0.5-10

μm intermetallic constituents did not substantially affect a.c.

. thick porous film growth, film/electrolyte and

film/metal interfaces, film pore and barrier layer structures, or

uniformity of film thickness. The mechanisms of incorporation of

nonreactive Fe-rich 2nd-phase particles and reactive Cu-rich

intermetallics into the growing film are discussed.

SUPPL. TERM: intermetallic incorporation anodized aluminum alloy; alternating current anodization aluminum alloy; oxalic acid anodization aluminum alloy; sulfuric acid anodization aluminum alloy

INDEX TERM: Intermetallic compounds  
 ROLE: PROC (Process)  
 (incorporation of, in anodic coatings, on aluminum alloys from a.c. anodization in oxalic and sulfuric acids)

INDEX TERM: Anodization  
 (of aluminum alloy, in oxalic acid and sulfuric acid, using a.c.)

INDEX TERM: Electric current  
 (alternating, in anodization in aluminum alloys in oxalic and sulfuric acids)

INDEX TERM: Coating materials  
 (anodic, on aluminum alloys, dispersed intermetallics in, from a.c. anodization in sulfuric and oxalic acids)

INDEX TERM: 144-62-7, uses and miscellaneous  
 ROLE: USES (Uses)  
 (anodization of aluminum alloys in solns. containing, using a.c., dispersed intermetallics in anodic films in relation to)

INDEX TERM: 7664-93-9, uses and miscellaneous  
 ROLE: USES (Uses)  
 (anodization of aluminum alloys in solns. of, using a.c., dispersed intermetallics in anodic films in relation to)

INDEX TERM: 11146-12-6 12616-84-1  
 ROLE: PRP (Properties)  
 (coatings on, anodic, incorporation of dispersed intermetallics in, from a.c. anodization in oxalic acid and sulfuric acid solns.)

L36 ANSWER 20 OF 20 JAPIO (C) 2008 JPO on STN  
 ACCESSION NUMBER: 2004-335459 JAPIO Full-text  
 TITLE: METAL CARRYING POROUS CARBON FILM, ELECTRODE FOR FUEL CELL, AND FUEL CELL USING THE SAME  
 INVENTOR: OYA NOBUO; FUJII YUICHI; MATSUO MAKOTO; TAKAGI JUN  
 PATENT ASSIGNEE(S): UBE IND LTD  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2004335459	A	20041125	Heisei	H01M004-86

## APPLICATION INFORMATION

STN FORMAT:	JP 2004-121247	20040416
ORIGINAL:	JP2004121247	Heisei
PRIORITY APPLN. INFO.:	JP 2003-113978	20030418
SOURCE:	PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2004	
INT. PATENT CLASSIF.:		
MAIN:	H01M004-86	
SECONDARY:	H01M004-88; H01M004-92; H01M008-10	

ADDITIONAL: C01B031-02

ABSTRACT:

PROBLEM TO BE SOLVED: To provide a metal carrying porous carbon film made to uniformly carry metal fine particles of controlled particle sizes, having a carrier structure capable of effectively utilizing a metallic catalyst, manufactured by a simple manufacturing process, and to provide an electrode for a fuel cell, and the fuel cell using the same.

SOLUTION: In the metal carrying porous carbon film, metal particles having average particle diameters of 0.7-20 nm, especially 1-10 nm, are dispersed and carried on a surface wall having fine pores. The electrode for a fuel cell using the metal carrying porous carbon film and an membrane-electrode junction made by jointing the electrode for a fuel cell on both sides of a polymer electrolyte membrane are obtained.

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